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## GOEWERMENSKENNISGEWINGS

### DEPARTEMENT VAN MANNEKRAG

No. R. 1593

12 Augustus 1988

WET OP MASJINERIE EN BEROEPSVEILIGHEID,  
1983 (WET 6 VAN 1983)

Die Minister van Mannekrag het kragtens artikel 35 van die Wet op Masjinerie en Beroepsveiligheid, 1983 (Wet 6 van 1983), die regulasies in die Bylae hiervan uitgevaardig.

#### BYLAE

#### ELEKTRIESE MASJINERIEREGULASIES

##### Woordomskrywing

1. In hierdie regulasies het enige woord of uitdrukking waaraan 'n betekenis in die Wet geheg is, daardie betekenis en, tensy uit die samehang anders blyk, beteken—

“beperte ruimte” ’n gebied soos omskryf in regulasie 1 van die regulasies afgekondig by Goewermenskennisgewing R. 1031 van 30 Mei 1986;

“die Wet” die Wet op Masjinerie en Beroepsveiligheid, 1983 (Wet 6 van 1983);

“dood” om en by nulpotensiaal en geïsoleer van enige lewendige stelsel;

“elektriese heining” ’n geëlektrifiseerde versperring teen betreding deur mense of diere, wat uit een of meer kaal geleiers bestaan;

“elektriese installasie” ’n elektriese installasie soos omskryf in regulasie 1 van die regulasies afgekondig by Goewermenskennisgewing R. 2270 van 11 Oktober 1985;

“geaard” verbind met die algemene aardmassa op so ’n wyse dat dit te alle tye ’n onmiddellike veilige ontlasting van elektriese energie sal verseker;

“geïsoleer” bedek met isoleermateriaal van sodanige dikte en eienskappe dat dit die vloeï van elektriese energie tussen die voorwerp aldus bedek en sy omgewing of enige buitevoorwerp wat daaraan raak, sal voorkom;

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## GOVERNMENT NOTICES

### DEPARTMENT OF MANPOWER

No. R. 1593

12 August 1988

MACHINERY AND OCCUPATIONAL SAFETY ACT,  
1983 (ACT 6 OF 1983)

The Minister of Manpower has under section 35 of the Machinery and Occupational Safety Act, 1983 (Act 6 of 1983), made the regulations contained in the Schedule hereto.

#### SCHEDULE

#### ELECTRICAL MACHINERY REGULATIONS

##### Definitions

1. In these regulations any word or expression to which a meaning has been assigned in the Act shall have that meaning and, unless the context otherwise indicates—

“circuit” means an arrangement of conductors for the purpose of carrying electrical energy;

“conductor” means an electrical conductor arranged to be electrically connected to a source of electrical energy;

“confined space” means an area as defined in regulation 1 of the regulations published by Government Notice R. 1031 of 30 May 1986;

“dead” means at or about zero potential and isolated from any live system;

“earthed” means connected to the general mass of earth in such a manner as will ensure at all times an immediate safe discharge of electrical energy;

“electric fence” means an electrified barrier against the trespass of persons or animals which consists of one or more bare conductors;

“electrical installation” means an electrical installation as defined in regulation 1 of the regulations published by Government Notice R. 2270 of 11 October 1985;

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“geleier” ’n elektriese geleier so ingerig om elektries verbind te word met ’n elektriese energiebron;

“heining-energiewekker” elektriese masjinerie wat so ingerig is dat dit ’n periodieke, nie-dodende hoeveelheid elektriese energie aan ’n elektriese heining wat daaraan verbind is, lewer;

“kring” ’n rangskikking van geleiers met die doel om elektriese energie te dra;

“lewendig” elektries gelaai;

“leweransier” ’n leweransier soos omskryf in regulasie 1 van die regulasies afgekondig by Goewermentskennisgewing R. 2270 van 11 Oktober 1985;

“lugverbruiksaansluiting” die luggeleiers tussen die leweransier se kragnet en die verbruiker se elektriese installasie;

“miniatuursubstasie” ’n substasie wat ’n persoon nie kan binnegaan nie;

“spanning” die verskil in elektriese potensiaal tussen enige twee geleiers of tussen ’n geleier en die aarde;

“stelsel” ’n elektriese stelsel waarin al die geleiers en toestelle elektries verbind is met ’n gemeenskaplike elektriese energiebron;

“verplaasbare elektriese gereedskap” enige elektries-gedrewe werktuig, uitgesonderd gewone huishoudelike elektriese toestelle, wat ontwerp is vir gebruik met—

(a) ’n buigsame koord aan die toevoerkant en bedoel is vir gebruik met die hand en om met die hand by die werkplek gedra te word; of

(b) ’n buigsame kabel aan die toevoerkant en bedoel is om by die werkplek met die hand gebruik en met die hand verskuif te word.

### **Veiligheidsuitrusting**

2. Sonder om afbreuk te doen aan enige bepaalde plig wat werkgewers of gebruikers van masjinerie deur die Wet opgelê word, moet die werkgewer of gebruiker geïsoleerde stellings, bokke, matte, of sodanige ander beskermende uitrusting as wat nodig is om ongelukke te voorkom, kosteloos verskaf en in goeie toestand onderhou, vir gebruik deur persone wat werk verrig aan of in die onmiddellike nabyheid van lewendige elektriese masjinerie of elektriese masjinerie wat dood is maar lewendig kan word.

### **Werk aan ontkoppelde elektriese masjinerie**

3. Sonder om afbreuk te doen aan enige bepaalde plig wat werkgewers of gebruikers van masjinerie deur die Wet opgelê word, moet die werkgewer of gebruiker, wanneer werk aan enige elektriese masjinerie verrig moet word wat van alle elektriese energiebronne ontkoppel is maar wat moontlik ’n elektriese lading kan ontvang of behou, sover doenlik voorsorg tref deur aarding of ander middels om, voordat dit hanteer word, die elektriese energie van sodanige elektriese masjinerie of enige aangrensende elektriese masjinerie te laat ontlai indien dit enige gevaar inhou, en om te voorkom dat enige elektriese masjinerie gelaai of lewendig gemaak word terwyl persone daaraan werk.

### **Kennisgewings**

4. Sonder om afbreuk te doen aan enige bepaalde plig wat gebruikers van masjinerie deur die Wet opgelê word, moet die gebruiker kennisgewings in albei amptelike tale laat aanbring binne en by alle aangewese toegange, na gelang van die geval, van die persele waarop opwekkingsinstallasies en transformeer-, skakel- of verbindingstoestelle geleë is, welke kennisgewings—

(a) ongemagtigde persone verbied om sodanige persele binne te gaan;

“fence energiser” means electrical machinery arranged so as to deliver a periodic non-lethal amount of electrical energy to an electric fence connected to it;

“insulated” means covered with insulating material of such thickness and properties that it will prevent the flow of electrical energy between the object so covered and its surroundings or any external object in contact with it;

“live” or “alive” means electrically charged;

“miniature substation” means a substation that a person cannot enter;

“overhead service connections” means the overhead conductors between the supplier’s mains and the consumer’s electrical installation;

“portable electric tool” means any electrically operated implement, with the exception of ordinary household electrical appliances, which is designed for use with—

(a) a flexible cord at the supply end and which is intended for use by hand and to be carried by hand at the place of work; or

(b) a flexible cable at the supply end and which is intended for use by hand and to be moved by hand at the place of work;

“supplier” means a supplier as defined in regulation 1 of the regulations published by Government Notice R. 2270 of 11 October 1985;

“system” means an electrical system in which all the conductors and devices are electrically connected to a common source of electrical energy;

“the Act” means the Machinery and Occupational Safety Act, 1983 (Act 6 of 1983);

“voltage” means the difference in electrical potential between any two conductors or between a conductor and the earth.

### **Safety equipment**

2. Without derogating from any specific duty imposed on employers or users of machinery by the Act, the employer or user shall provide free of charge and maintain in good condition insulated stands, trestles, mats or such other protective equipment as may be necessary to prevent accidents, for use by persons engaged in working on or in close proximity to live electrical machinery or dead electrical machinery which may become live.

### **Work on disconnected electrical machinery**

3. Without derogating from any specific duty imposed on employers or users of machinery by the Act, the employer or user shall, whenever work is to be carried out on any electrical machinery which has been disconnected from all sources of electrical energy but which is liable to acquire or to retain an electrical charge, as far as is practicable, cause precautions to be taken by earthing or other means to discharge the electrical energy to earth from such electrical machinery or any adjacent electrical machinery if there is danger therefrom before it is handled and to prevent any electrical machinery from being charged or made live while persons are working thereon.

### **Notices**

4. Without derogating from any specific duty imposed on users of machinery by the Act, the user shall cause notices in both official languages to be exhibited within, and at all designated entrances to the premises, as the case may be, on which generating plant and transforming, switching or linking apparatus are situated, which notices—

(a) prohibit unauthorised persons from entering such premises;



(b) ongemagtigde persone verbied om elektriese masjinerie te hanteer of daaraan te peuter;

(c) aanwysings bevat betreffende optrede in geval van brand; en

(d) aanwysings bevat oor hoe om persone by te bring wat aan die gevolge van elektriese skok ly;

Met dien verstande dat hierdie regulasie nie van toepassing is nie op miniatuursubstasies en distribusiekaste, mits hulle toegangsdeure gesluit of vasgeskroef kan word en slegs gemagtigde persone toegelaat word om hulle oop te maak en daaraan te werk.

### **Skakel- en transformatorpersele**

5. (1) Die gebruiker moet toesien dat ingeslote persele wat skakeltuig en transformatore huisves—

(a) groot genoeg is om vry werkruimte te verskaf vir bedienings- en onderhoudspersoneel;

(b) voldoende geventileer is om die uitrusting op 'n veilige werktemperatuur te hou;

(c) sover doenlik so gebou is dat dit bestand is teen knaagdiere, lekkasie, syfering en oorstrooming;

(d) waar nodig voorsien is van verligting wat dit moontlik maak om alle uitrusting, deurgange en werkruimtes duidelik te onderskei en alle instrumente, etikette en kennisgewings maklik te lees;

(e) deure of hekke het wat maklik van binne oopgemaak kan word en wat na buite oopgaan;

(f) voorsien is van brandblustoestelle wat geskik is vir gebruik op elektriese masjinerie en wat in 'n goeie werkende toestand is: Met dien verstande dat in die geval van onbemande persele geskikte brandblustoestelle op sodanige persele beskikbaar gestel moet word slegs wanneer werk daaraan of daarin aan die gang is; en

(g) sodanig gebou is dat persone nie kan inreik en aan lewendige geleiers of oop lewendige onderdele van elektriese masjinerie raak nie.

(2) Niemand anders as 'n persoon wat deur die gebruiker daartoe gemagtig is, mag persele wat skakeltuig en transformatore huisves, binnegaan of deur die gebruiker verplig of toegelaat word om sulke persele binne te gaan nie, tensy alle lewendige geleiers teen onopsetlike aanraking geïsoleer of afgeskerm is: Met dien verstande dat die persoon aldus gemagtig, deur enige ander persoon wat onder sy toesig handel, vergesel mag word.

### **Elektriese beheeruitrusting**

6. (1) Die gebruiker moet elke elektriese installasie en kraglyn voorsien van beheeruitrusting en beskermende toestelle wat, vir sover redelikerwys uitvoerbaar, in staat moet wees om die kragtoevoer outomaties te isoleer ingeval 'n defek aan sodanige installasie of kraglyn ontwikkel.

(2) Geen gebruiker mag 'n skakelaar, stroombreker of sekering in die neutrale geleier van 'n veelfasige wisselstroom of driedraad-gelykstroombdistribusiestelsel plaas nie tensy sodanige skakelaar, stroombreker of sekering so ingerig is dat dit al die fasegeleiers en die neutrale geleier gelyktydig isoleer: Met dien verstande dat dit nie ook 'n isoleerskakel op die neutrale geleier insluit wat vir toetsdoeleindes of vir die voorkoming van kringloopstrome geïnstalleer is nie.

(3) Die gebruiker moet, waar dit redelikerwys uitvoerbaar is, skakeltuig verskaf met 'n grendeltoestel wat so ingerig is dat die deur of deksel van die skakelaar nie oopgemaak kan word nie tensy die skakelaar in die "af"-posisie is en ook nie aangeskakel kan word nie tensy die deur of deksel gesluit is.

(b) prohibit unauthorised persons from handling or interfering with electrical machinery;

(c) contain directions of procedure in case of fire; and

(d) contain directions on how to resuscitate persons suffering from the effects of electric shock:

Provided that this regulation shall not apply to miniature substations and distribution boxes, on condition that their access doors can be locked or bolted and that only authorised persons are permitted to open them and work thereon.

### **Switch and transformer premises**

5. (1) The user shall cause enclosed premises housing switchgear and transformers—

(a) to be of ample size so as to provide clear working space for operating and maintenance staff;

(b) to be sufficiently ventilated to maintain the equipment at a safe working temperature;

(c) to be, as far as is practicable, constructed so as to be proof against rodents, leakage, seepage and flooding;

(d) where necessary to be provided with lighting that will enable all equipment, thoroughfares and working areas to be clearly distinguished and all instruments, labels and notices to be easily read;

(e) to have doors or gates which can be readily opened from the inside, opening outwards;

(f) to be provided with fire extinguishing appliances which are suitable for use on electrical machinery and which are in good working order: Provided that, in the case of unattended premises, suitable fire extinguishing appliances need only be made available at such premises when work is in progress thereon or therein; and

(g) to be of such construction that persons cannot reach in and touch bare conductors or exposed live parts of the electrical machinery.

(2) No person other than a person authorised thereto by the user shall enter, or be required or permitted by the user to enter, premises housing switchgear or transformers unless all live conductors are insulated against inadvertent contact or are screened off: Provided that the person so authorised may be accompanied by any other person acting under his control.

### **Electrical control gear**

6. (1) The user shall provide every electrical installation and power line with controlling apparatus and protective devices which shall, as far as is reasonably practicable, be capable of automatically isolating the power supply in the event of a fault developing on such installation or power line.

(2) No user shall place a switch, circuit breaker or fuse in the neutral conductor of a polyphase alternating current or three-wire direct current distribution system unless such switch, circuit breaker or fuse is so arranged as to isolate all phase conductors and the neutral conductor simultaneously: Provided that this shall not include an isolating link on the neutral conductor installed for test purposes or to prevent circulating currents.

(3) The user shall, whenever reasonably practicable, provide switchgear with an interlocking device so arranged that the door or cover of the switch cannot be opened unless the switch is in the "off" position and cannot be switched on unless the door or cover is locked.

(4) Die gebruiker moet alle beheertoestelle permanent merk of etiketteer ten einde die stelsel of deel van die stelsel of die elektriese masjinerie wat dit beheer, te identifiseer, en waar sodanige beheertoestelle van voor en van agter bereikbaar is, moet dit sowel voorop as agterop gemerk of geëtiketteer word.

(5) Die gebruiker moet 'n kennisgewing aanbring by skakel- of beheeruitrusting wat afgeskakel of uitgesluit is om persone in staat te stel om aan elektriese masjinerie of ander masjinerie wat met elektrisiteit werk en wat met sodanige skakel- of beheeruitrusting beheer word, te werk, wat teen die heraanskakeling van sodanige skakel- of beheeruitrusting waarsku.

(6) Niemand mag in stryd met 'n waarskuwing in subregulasie (5) bedoel, optree nie.

### **Skakelborde**

7. Die gebruiker moet vir bedienings- en onderhoudspersoneel 'n onversperde ruimte aan die agter- en die voorkant van alle skakelborde voorsien, en die ruimte aan die agterkant moet toe en gesluit gehou word, behalwe vir die doel van inspeksie, verandering of herstelwerk: Met dien verstande dat die vereistes van hierdie regulasie ten opsigte van die onversperde ruimte aan die agterkant van die skakelbord nie van toepassing is nie in die geval van—

(a) skakelborde wat geen ongeïsoleerde geleiers het wat van die agterkant toeganklik is nie;

(b) skakelborde waarvan die skakeluitrusting totaal ingeslote is;

(c) skakelborde waarvan die agterkant bereik kan word slegs deur 'n opening in die muur of afskorting waarteen hulle staan, welke opening toe en gesluit gehou word; en

(d) skakelborde wat veilig en doeltreffend vanaf die voorkant onderhou kan word en waarvan alle onderdele vanaf die voorkant bereik kan word.

### **Elektriese masjinerie in gevaarlike plekke**

8. (1) Niemand mag elektriese masjinerie gebruik nie in plekke waar daar gevaar van brand of ontploffing bestaan weens die aanwesigheid, voorkoms of ontwikkeling van ontplofbare of vlambare artikels, of waar ontplofbare artikels vervaardig, gehanteer of gebêre word, tensy sodanige elektriese masjinerie met betrekking tot die konstruksie daarvan rakende die klassifikasie van die gevaarlike plekke waarin dit gebruik gaan word, voldoen aan die vereistes van 'n veiligheidsstandaard wat vir hierdie doel kragtens artikel 36 van die Wet by hierdie regulasies ingelyf is.

(2) Elke gebruiker in subregulasie (1) bedoel, moet in besit wees van 'n sertifikaat in 'n vorm wat vir die hoofinspekteur aanvaarbaar is en wat uitgereik is deur 'n goedgekeurde inspeksie-owerheid, waarin gesertifiseer is dat die elektriese masjinerie in subregulasie (1) bedoel, vir die groepe gevaarlike artikels vervaardig en getoets is ooreenkomstig die veiligheidsstandaard wat vir hierdie doel kragtens artikel 36 van die Wet by hierdie regulasies ingelyf is: Met dien verstande dat in plaas van so 'n sertifikaat, 'n inspekteur permanente etikettering wat al die tersaaklike besonderhede bevat, op sodanige masjinerie kan goedkeur.

(3) Wanneer uiteenlopende elektriese masjinerie soos motore, kables en beheertoestelle saam gebruik word om 'n elektriese installasie te skep, moet die gebruiker toesien dat die keuse, rangskikking, installering, beskerming, onderhoud en bediening daarvan nie minder veilig is nie as wanneer die individuele items van sodanige masjinerie afsonderlik gebruik word.

(4) Die gebruiker moet elektriese masjinerie waarop hierdie regulasie van toepassing is, slegs onder sodanige toestande en in sodanige omgewing gebruik as wat die veiligheidsstandaard in subregulasie (2) bedoel, voorskryf.

(4) The user shall mark or label all controlling apparatus permanently so as to identify the system or part of the system or the electrical machinery which it controls, and where such control apparatus is accessible from the front and the back these markings shall be on both the front and the back.

(5) The user shall post a notice at switch or control gear which has been switched off or locked out to enable persons to work on electrical machinery or other machinery operated by electricity and controlled by such switch or control gear, warning against re-closing such switch or control gear.

(6) No person shall act contrary to a warning in terms of subregulation (5).

### **Switchboards**

7. The user shall provide an unobstructed space for operating and maintenance staff at the back and front of all switchboards, and the space at the back shall be kept closed and locked except for the purpose of inspection, alteration or repair; Provided that the requirements of this regulation with respect to the unobstructed space at the back of the switchboard shall not apply in the case of—

(a) switchboards which have no uninsulated conductors accessible from the back;

(b) switchboards, the switchgear of which is of a totally enclosed construction;

(c) switchboards, the backs of which are only accessible through an opening in the wall or partition against which they are placed, such openings being kept closed and locked; and

(d) switchboards which can be safely and effectively maintained from the front and which have all parts accessible from the front.

### **Electrical machinery in hazardous locations**

8. (1) No person may use electrical machinery in locations where there is danger of fire or explosion owing to the presence, occurrence or development of explosive or flammable articles, or where explosive articles are manufactured, handled or stored, unless such electrical machinery, with regard to its construction relating to the classification of the hazardous locations in which it is to be used, meets the requirements of a safety standard incorporated for this purpose in these regulations under section 36 of the Act.

(2) Every user referred to in subregulation (1) shall be in possession of a certificate in a form acceptable to the chief inspector which has been issued by an approved inspection authority, in which it is certified that the electrical machinery referred to in terms of subregulation (1) has been manufactured and tested for the groups of dangerous articles in terms of the safety standard which has been incorporated in these regulations for this purpose under section 36 of the Act: Provided that in lieu of such certificate an inspector may approve permanent labelling on such machinery which contains all the relevant information.

(3) When diverse items of electrical machinery such as motors, cables and control apparatus are used together to form an electrical installation, the user shall ensure that the selection, arrangement, installation, protection, maintenance and working thereof results in no less a degree of safety than when the individual items of such machinery are used separately.

(4) The user shall use electrical machinery to which this regulation applies only under such conditions and in such surroundings as are prescribed in the safety standard referred to in subregulation (2).



(5) Niemand mag herstel- of verstelwerk aan elektriese masjinerie doen of andersins daaraan werk nie onder toestand soos in subregulasie (1) bedoel, tensy sodanige masjinerie dood gemaak is en doeltreffende stappe gedoen is om te verseker dat sodanige masjinerie dood bly.

(6) Waar daar 'n moontlikheid bestaan van die vorming van statiese elektrisiteit onder werktoestande, moet die gebruiker alle metaalstrukture, masjienonderdele, lugvervoerkanaal en pyplyne wat vlambare artikels of iets dergelyks vervoer, aard, of sodanige ander maatreëls tref as wat nodig is om die vorming van elektriese vonke doeltreffend te voorkom.

(7) Die gebruiker moet toesien dat alle elektriese masjinerie waarop hierdie regulasie betrekking het, met tussenpose van hoogstens twee jaar ondersoek en getoets word deur 'n persoon wat bevoeg is om oor die veiligheid daarvan uitpraak te gee.

(8) Die persoon wat die ondersoek in subregulasie (7) bedoel uitvoer, moet die resultate van elke sodanige ondersoek aanteken, onderteken en dateer in 'n verslagboek wat vir hierdie doel deur die gebruiker gehou moet word: Met dien verstande dat waar sodanige masjinerie onderworpe is aan ongunstige fisiese of klimaatstoestande, die frekwensie van bedoelde ondersoek verhoog moet word tot tussenpose van hoogstens een jaar of sodanige korter tydperk as wat die omstandighede vereis.

#### **Verplaasbare elektriese gereedskap**

9. (1) Geen gebruiker mag die gebruik van verplaasbare elektriese gereedskap waarvan die werkspanning 50 V na aarde te bowe gaan, toelaat nie en niemand mag sodanige gereedskap gebruik nie tensy—

(a) dit verbind is met 'n elektriese energiebron wat toegerus is met 'n beskermingstoestel teen aardlekstroom van 'n konstruksie wat voldoen aan die vereistes van 'n veiligheidsstandaard wat vir hierdie doel kragtens artikel 36 van die Wet by hierdie regulasies ingelyf is; of

(b) dit verbind is met 'n elektriese energiebron deur die tussenvoeging tussen elke stuk gereedskap en die bron van 'n individueel dubbelgewikkelde isoleertransformator waarvan die sekondêre wikkeling op geen punt geaard is nie en die konstruksie daarvan voldoen aan die vereistes van 'n veiligheidsstandaard wat kragtens artikel 36 van die Wet vir hierdie doel by hierdie regulasies ingelyf is; of

(c) dit verbind is met 'n elektriese energiebron van hoë frekwensie verkry van 'n generator wat uitsluitlik gebruik word om energie aan sodanige verplaasbare elektriese gereedskap te verskaf, en sodanige reëling deur die hoofinspekteur goedgekeur is; of

(d) dit duidelik gemerk is dat dit vervaardig is met dubbele of versterkte isolasie.

(2) Niemand mag verplaasbare elektriese gereedskap, wat met dubbele of versterkte isolasie soos in subregulasie (1) (d) bedoel vervaardig is, verkoop nie, tensy—

(a) dit duidelik gemerk is dat dit vervaardig is met sodanige isolasie; en

(b) die isolering daarvan vervaardig is ooreenkomstig 'n veiligheidsstandaard wat vir hierdie doel kragtens artikel 36 van die Wet by hierdie regulasies ingelyf is.

(3) Niemand mag verplaasbare elektriese gereedskap wat nie toegerus is met 'n skakelaar wat dit moontlik maak om die gereedskap maklik en veilig aan die gang te sit en af te sluit nie, gebruik of die gebruik daarvan toelaat nie.

(4) Die gebruiker moet elke stuk verplaasbare elektriese gereedskap, tesame met sy buigsame koord en prop, in 'n diensbare toestand hou.

(5) No person shall effect repairs or adjustments to or otherwise work on electrical machinery under conditions envisaged by subregulation (1) unless such machinery has been rendered dead and effective measures have been taken to ensure that such machinery remains dead.

(6) Wherever there is a possibility of the formation of static electricity under working conditions, the user shall earth all metallic structures, machine parts, pneumatic conveyor ducts and pipelines conveying flammable articles and the like, or take such other measures as may be necessary to effectively prevent the formation of electric sparks.

(7) The user shall cause all electrical machinery to which this regulation applies to be examined and tested at intervals not exceeding two years by a person who is competent to express an opinion on the safety thereof.

(8) The person carrying out the examination referred to in subregulation (7) shall enter, sign and date the results of each such examination in a record book which shall be kept by the user for this purpose: Provided that where such machinery is subject to adverse climatic or physical conditions the frequency of such examinations shall be increased to intervals of not longer than one year or such shorter period as circumstances may necessitate.

#### **Portable electric tools**

9. (1) No user shall permit the use of and no person shall use a portable electric tool the operating voltage of which exceeds 50 to earth unless—

(a) it is connected to a source of electrical energy incorporating an earth leakage protection device, the construction of which meets the requirements of a safety standard incorporated for this purpose in these regulations under section 36 of the Act; or

(b) it is connected to a source of electrical energy through the interposition between each tool and the source of an individually double-wound isolating transformer, the secondary winding of which is not earthed at any point and the construction of which meets the requirements of a safety standard incorporated for this purpose in these regulations under section 36 of the Act; or

(c) it is connected to a source of high frequency electrical energy derived from a generator which is used solely for supplying energy to such portable electric tool and which arrangement is approved by the chief inspector; or

(d) it is clearly marked that it is constructed with double or reinforced insulation.

(2) No person shall sell a portable electric tool constructed with double or reinforced insulation referred to in subregulation (1) (d) unless—

(a) it is clearly marked that it is constructed with such insulation; and

(b) its insulation is constructed in accordance with a safety standard incorporated for this purpose in these regulations under section 36 of the Act.

(3) No person shall use or permit the use of a portable electric tool which is not fitted with a switch to allow for easy and safe starting and stopping of the tool.

(4) The user shall maintain every portable electric tool, together with its flexible cord and plug, in a servicable condition.

**Draagbare elektriese ligte**

10. (1) Niemand mag 'n draagbare elektriese lig waarvan die werkspanning 50 V te bowe gaan, gebruik nie tensy—

(a) dit toegerus is met 'n stewige handvat wat van nie-hygroscopiese, nie-geleidende materiaal gemaak is;

(b) alle lewendige metaaldele of dele wat lewendig kan word weens 'n defekte stroomkring, geheel en al teen onopsetlike aanraking beskerm is;

(c) die lamp beskerm is deur middel van 'n stewige skerm wat stewig aan die geïsoleerde handvat vasgesit is; en

(d) die kabelinleier sodanig is dat die isolering ruwe gebruik kan weerstaan.

(2) Niemand mag in nat of klam toestande, of in beperkte ruimtes binne-in metaalhouers, of wanneer hy in aanraking is met groot massas metaal, 'n draagbare elektriese lig gebruik nie tensy, behoudens die bepalings van subregulasie (1)—

(a) die lamp gekoppel is aan 'n elektriese energiebron wat toegerus is met 'n aardlekstroombeveiligingstoestel waarvan die konstruksie voldoen aan die vereistes van 'n veiligheidsstandaard wat vir hierdie doel kragtens artikel 36 van die Wet by hierdie regulasies ingelyf is; of

(b) die werkspanning van die lamp hoogstens 50 V is, en waar hierdie elektriese energie van 'n transformator verkry word, moet sodanige transformator aparte wikkelings hê.

**Elektriese heinings**

11. (1) Geen gebruiker mag 'n heining-energiewekker installeer wat impulse van elektriese energie aan 'n elektriese heining lewer wat nie gelyk aan of binne die volgende waardes is nie:

|                                                                                 |        |
|---------------------------------------------------------------------------------|--------|
| Topwaarde van spanning.....                                                     | 10 kV  |
| Maksimum duurte van impuls.....                                                 | 50 ms  |
| Minimum tussenpose tussen impulse.....                                          | 0,75 s |
| Maksimum hoeveelheid elektrisiteit per impuls ....                              | 2,5 mC |
| Maksimum energie-ontlading per impuls, gemeet by 'n weerstand van 500 ohm ..... | 8 J    |

(2) Die gebruiker moet toesien dat elke heining-en-energie-wekker—

(a) so vervaardig is dat dit stof en water uit hou; en

(b) nie in stowwerige plekke of plekke waar daar 'n brand gevaar bestaan geïnstalleer word nie.

(3) Die gebruiker mag nie 'n heining-energiewekker wat sy energie van 'n elektrisiteitsvoorsieningstelsel ontvang, installeer nie—

(a) in plekke waar die energiewekker waarskynlik meganiese beskadiging sal opdoen of waar daar waarskynlik daarmee gepeuter sal word;

(b) op enige paal van 'n oorhoofse krag- of kommunikasielyn, met uitsondering van pale wat die kraggeleiers van die energiewekker dra; en

(c) tensy die afvoerkring geïsoleer is van die toevoer deur middel van 'n dubbelgewikkelde isoleertransformator.

(4) Die gebruiker van 'n heining-energiewekker moet—

(a) sorg dat die aarding van elke heining-energiewekker vry en ten minste 2 m verwyder is van die aarding van enige ander elektriese stelsel; en

(b) nie doringdraad elektrifiseer nie maar slegs gladde draad of sodanige artikels as wat 'n persoon dadelik kan los as hy daaraan raak: Met dien verstande dat 'n gladde draad wat aan 'n doringdraadheining gemonteer is, geëlektrifiseer mag word.

**Portable electric lights**

10. (1) No person shall use a portable electric light the operating voltage of which exceeds 50 unless—

(a) it is fitted with a substantial handle which is made of non-hygroscopic, non-conducting material;

(b) all live metal parts or parts which may become live owing to a faulty circuit are completely protected against accidental contact;

(c) the lamp is protected by means of a substantial guard firmly fixed to the insulated handle; and

(d) the cable lead-in is such that the insulation can withstand rough use.

(2) No person shall use a portable electric light in wet or damp conditions or in closely confined spaces inside metal vessels or when he is in contact with large masses of metal, unless, subject to the provisions of subregulation (1)—

(a) the lamp is connected to a source of electrical energy incorporating an earth leakage protection device the construction of which meets the requirements of a safety standard incorporated for this purpose in these regulations under section 36 of the Act; or

(b) the operating voltage of the lamp does not exceed 50 V, and where this electrical energy is derived from a transformer such transformer shall have separate windings.

**Electric fences**

11. (1) No user shall install a fence energiser which delivers impulses of electrical energy to an electric fence which are not equal to or within the following values:

|                                                                                 |        |
|---------------------------------------------------------------------------------|--------|
| Peak value of voltage.....                                                      | 10 kV  |
| Maximum duration of impulse.....                                                | 50 ms  |
| Minimum interval between impulses.....                                          | 0,75 s |
| Maximum quantity of electricity per impulse .....                               | 2,5 mC |
| Maximum energy discharge per impulse measured at a resistance of 500 ohms ..... | 8 J    |

(2) The user shall ensure that every fence energiser—

(a) is constructed so as to exclude dust and water; and

(b) is not installed in dusty locations or locations where there is a fire hazard.

(3) The user shall not install a fence energiser which receives its energy from an electric supply system—

(a) in locations where the energiser is likely to sustain mechanical damage or be tampered with;

(b) on any pole of an overhead power or communication line except poles which carry the conductors of the energiser; and

(c) unless the output circuit is isolated from the supply by means of a double-wound isolating transformer.

(4) The user of a fence energiser shall—

(a) cause the earth of every fence energiser to be free and at least 2 m away from the earth of any other electrical system; and

(b) not electrify barbed-wire but only smooth wire or such articles as will enable a person touching it to let go immediately: Provided that smooth wires attached to barbed wirefences may be electrified.



(5) In die geval van 'n heining-energiewekker wat sy energie van 'n battery ontvang wat gelaai word deur middel van 'n laai-apparaat wat krag van 'n elektrisiteitsvoorsieningstelsel ontvang, moet die gebruiker sorg dat die laai-apparaat van dubbelgewikkelde isolasiekonstruksie is.

(6) Wanneer 'n elektriese heining langs 'n openbare pad of in 'n stedelike gebied geïnstalleer is, moet die gebruiker—

(a) die geëlektrifiseerde drade of artikels, sover doenlik, in sulke posisies monteer dat persone nie per abuis daarmee in aanraking kan kom nie; en

(b) kennisgewings opvallend ten toon stel wat mense waarsku dat die perseel deur 'n elektriese heining beskerm word.

### **Inspeksie-owerhede**

12. (1) Die hoofinspekteur kan enige organisasie wat die voorgeskrewe funksies ten opsigte van die vervaardiging of toetsing van elektriese masjinerie uitvoer, as 'n inspeksie-owerheid goedkeur.

(2) Die hoofinspekteur kan vereis dat 'n organisasie bedoel in subregulasie (1) sodanige besonderhede van sy tegniese toerusting en hulpbronne, die omvang van die kwalifikasies en ondervinding van sy personeel en sodanige ander sake as wat hy nodig ag, aan hom voorlê.

(3) Die hoofinspekteur kan enige goedkeuring van 'n inspeksie-owerheid te eniger tyd intrek.

### **Aarding**

13. (1) Die gebruiker moet toesien dat—

(a) dakke, geute, geutpype en vuilwaterpype op persele waaraan elektriese energie verskaf word, geaard is, behalwe—

(i) waar die werkspanning 50 V nie te bowe gaan nie;

(ii) dakke wat gemaak is van nie-geleidende materiaal of metaaldakke wat bedek is met 'n nie-geleidende materiaal;

(iii) geute, geutpype en vuilwaterpype wat gemaak is van nie-geleidende materiaal, of geute en geutpype geheg aan 'n metaaldak wat bedek is met 'n nie-geleidende materiaal;

(iv) dakke, geute, geutpype en vuilwaterpype op persele wat elektrisiteit ontvang deur middel van ondergrondse verbruiks aansluitings; en

(b) alle toeganklike metaaldele van elektriese masjinerie wat, hoewel hulle normaalweg nie deel van 'n elektriese kring uitmaak nie, per ongeluk lewendig kan word, beskerm is deur 'n isolasiebedekking of andersins afgesluit of geaard is, uitgesonderd—

(i) metaal in aardvrye plekke, behalwe lengtes metaalbedradingskanale en die noutsluitende metaalomhulsel en -pantsering van kables;

(ii) kort afsonderlike lengtes dik metaalbuise gebruik vir die meganiese beskerming van kables, waar sodanige kables nie in die sekondêre kringe van ontladingsarmatuurinstallasies gebruik word nie;

(iii) kort, nie-ontblote, afsonderlike lengtes metaalbedradingskanale gebruik vir die meganiese beskerming van geïsoleerde drade wat deur mure, vloere, afskortings of plafonne gaan;

(iv) metaalwerk van vaste elektriese masjinerie waar sodanige metaalwerk meer as 2,4 m bokant die vloer is: Met dien verstande dat hierdie uitsondering nie geld nie waar sodanige metaalwerk geleë is op enige plek wat waarskynlik klam sal word, of in die luikgang van 'n hyser, of naby draaiende masjinerie, of in aanraking is met 'n muur, plafon of ander bestutting gemaak van of bedek deur geleidingsmateriaal;

(5) In the case of a fence energiser which receives its energy from a battery charged by means of charging apparatus which receives power from an electric supply, the user shall ensure that the charging apparatus is of double-wound isolation construction.

(6) When an electric fence is installed along a public road or in an urban area the user shall—

(a) as far as is practicable mount the electrified wires or articles in such positions that persons cannot inadvertently come into contact therewith; and

(b) display notices conspicuously, warning people that the property is protected by an electric fence.

### **Inspection authorities**

12. (1) The chief inspector may approve any organisation which performs the prescribed functions with regard to the manufacture or testing of electrical machinery as an inspection authority.

(2) The chief inspector may require an organisation contemplated in terms of subregulation (1) to submit to him such particulars of its technical equipment and resources, the extent of the qualifications and experience of its staff and such other matters as he may deem necessary.

(3) The chief inspector may withdraw any approval of an inspection authority at any time.

### **Earthing**

13. (1) The user shall cause—

(a) roofs, gutters, downpipes and waste-pipes on premises to which electrical energy is supplied to be earthed, except—

(i) where the operating voltage does not exceed 50;

(ii) roofs made of non-conductive material or metal roofs covered by non-conductive material;

(iii) gutters, downpipes and waste-pipes made of non-conductive material or gutters and downpipes attached to a metal roof which is covered by non-conductive material;

(iv) roofs, gutters, downpipes and waste-pipes on premises which receive electricity by means of underground service connections; and

(b) all accessible metallic parts of electrical machinery which, though normally not forming part of an electrical circuit, may become alive accidentally, to be protected by an insulating covering or otherwise enclosed or to be earthed, except—

(i) metal in earth-free situations, other than runs of metal wireway and the close-fitting metal sheathing and armouring of cables;

(ii) short separate lengths of heavy-gauge metal wireway used for the mechanical protection of cables where such cables are not used in the secondary circuits of discharge luminaire installations;

(iii) short, unexposed, separate lengths of metal wireway used for the mechanical protection of insulated wiring passing through walls, floors, partitions or ceilings;

(iv) metalwork of fixed electrical machinery where such metalwork is more than 2,4 m above the floor: Provided that this exception shall not apply where such metalwork is situated in any position likely to become damp, or in an elevator shaft, or near rotating machinery, or in contact with a wall, ceiling or other support constructed of or covered with conducting material;

(v) metaaldele van elektriese masjinerie, waar sulke dele ingesluit of afgeskerm is deur isolasiemateriaal sodat sodanige metaaldele nie aangeraak kan word nie;

(vi) klampe, klemme, saals of ander toestelle om bedradingskanale en kables vas te sit;

(vii) kappe, weerkaatsers en skerms gestut op lamp-houers of ontladingsarmature;

(viii) lampdoppe;

(ix) metaaldele van of skroewe in of deur nie-geleidente materiaal, wat deur sodanige materiaal van stroomdraende dele en van gearde nie-stroomdraende dele geskei word op so 'n wyse dat hulle met normale gebruik nie lewendig kan word of in aanraking met gearde dele kan kom nie.

(2) Indien die leweransier te eniger tyd deur middel van 'n toets van enige elektriese installasie op 'n perseel vind dat die dakke, geute, geutype en vuilwaterpepe op die perseel of ontblote metaaldele van die elektriese installasie soos bedoel in subregulasie (1) nie gearde is nie, moet die leweransier vereis dat die okkupeerder of eienaar van sodanige perseel die nodige aarding binne 'n vasgestelde tyd van hoogstens 30 dae aanbring, en indien die okkupeerder of eienaar versuim om aan dié vereistes te voldoen, moet die leweransier die elektriese energie na sodanige perseel afsluit en die energie nie heraansluit voordat die aarding tot sy bevrediging uitgevoer is nie. Met dien verstande dat die bepaling met betrekking tot die afsluiting van die elektriese energie nie van toepassing is nie op persele waarvan die Staat (met inbegrip van 'n provinsiale raad, die Suid-Afrikaanse Vervoerdienste of die Departement van Pos- en Telekommunikasiewese) die eienaar is.

### Stutte

14. Die leweransier of gebruiker moet toesien dat die stutte vir kraglyne so ontwerp is dat die volgende minimum veiligheidsfaktore verseker word:

|                                                                        | Gebaseer op soort-getoetste breeksterkte | Gebaseer op berekende breeksterkte | Gebaseer op breukmodulus |
|------------------------------------------------------------------------|------------------------------------------|------------------------------------|--------------------------|
| Staaltraliatorings en dwarsarms .....                                  | 2,5                                      | 2,5                                | —                        |
| Naatloos getrokke staalpale .....                                      | 2,0                                      | 2,5                                | —                        |
| Gesweiste staalpale en staalpale met saal- of teleskoopplasse .....    | 2,2                                      | 2,5                                | —                        |
| Ankersamestelling .....                                                | 2,5                                      | 2,5                                | —                        |
| Pale van gewapende slingerbeton .....                                  | 2,4                                      | 3,5                                | —                        |
| Struktuur en onderdele van meganiese gevibreerde gewapende beton ..... | 2,5                                      | 3,5                                | —                        |
| Ander soorte strukture en onderdele van gewapende beton .....          | 2,75                                     | 3,75                               | —                        |
| Houtonderdele nie ononderbroke belas nie .....                         | 3,5                                      | —                                  | 2,7                      |
| Houtonderdele onderworpe aan ononderbroke belasting .....              | 5,5                                      | —                                  | 4,5                      |

Met dien verstande dat die leweransier of gebruiker by die berekening van die veiligheidsfaktore moet aanneem dat—

(a) daar geen gebreekte geleiers is nie;

(b) elke lyngeleier, kabel of draad wat deur die stut gedra word, 'n temperatuur van  $-5^{\circ}\text{C}$  het;

(c) lyngeleiers, saam met die stutte, onderwerp is aan 'n winddruk van 700 Pa; en

(d) in die geval van traliestrukture die oppervlakte vir die berekening van krag as gevolg van winddruk 1,5 maal die geprojekteerde oppervlakte van die dele aan een kant is, en in die geval van ronde, elliptiese of seshoekige pale, geleiers en drade die oppervlakte 0,6 maal die geprojekteerde oppervlakte is.

(v) metal parts of electrical machinery where such parts are enclosed or shrouded by insulating material so that such metal parts cannot be touched;

(vi) cleats, clips, saddles, clamps or other devices for fixing wireways and cables;

(vii) shades, reflectors and guards supported on lamp holders or discharge luminaires;

(viii) lamp caps;

(ix) metal parts of or screws in or through non-conducting material which are separated by such material from current-carrying parts and from earthed non-current-carrying parts in such a way that in normal use they cannot become live or come into contact with earthed parts.

(2) If at any time through a test of any electrical installation on a premises by the supplier it is found that the roofs, gutters, downpipes and waste-pipes of the premises or exposed metallic parts of the electrical installations as contemplated in subregulation (1) are not earthed, the supplier shall require the occupier or owner of such premises to effect the necessary earthing within a fixed period of not more than 30 days, and should the occupier or owner fail to comply with such requirements the supplier may disconnect the electrical energy to such premises and shall not reconnect such energy until the earthing has been carried out to his satisfaction: Provided that the provision for the disconnection of the electrical energy shall not apply to premises owned by the State (including a provincial council, the South African Transport Services or the Department of Posts and Telecommunications).

### Supports

14. The supplier or user shall cause the supports for power lines to be so designed as to provide the following minimum factors of safety:

|                                                                           | Based on type-tested breaking strength | Based on calculated breaking strength | Based on modulus rupture |
|---------------------------------------------------------------------------|----------------------------------------|---------------------------------------|--------------------------|
| Steel lattice towers and cross-arms .....                                 | 2,5                                    | 2,5                                   | —                        |
| Solid drawn steel poles .....                                             | 2,0                                    | 2,5                                   | —                        |
| Welded steel poles and steel poles with swaged or telescopic joints ..... | 2,2                                    | 2,5                                   | —                        |
| Stay assemblies .....                                                     | 2,5                                    | 2,5                                   | —                        |
| Reinforced concrete spun poles .....                                      | 2,4                                    | 3,5                                   | —                        |
| Mechanically vibrated reinforced concrete structures and components ..... | 2,5                                    | 3,5                                   | —                        |
| Other types of reinforced concrete structures and components .....        | 2,75                                   | 3,75                                  | —                        |
| Wooden members not continuously loaded .....                              | 3,5                                    | —                                     | 2,7                      |
| Wooden members subjected to continuous loading .....                      | 5,5                                    | —                                     | 4,5                      |

Provided that in calculating the factors of safety the supplier or user shall assume that—

(a) there are no broken conductors;

(b) every line conductor, cable or wire carried by the support is at a temperature of  $-5^{\circ}\text{C}$ ;

(c) line conductors, together with the supports, are subjected to a wind pressure of 700 Pa; and

(d) in the case of lattice structures the area for calculating the force due to wind pressure is 1,5 times the projected area of the members of one side and in the case of round, elliptical or hexagonal poles, conductors and wires the area is 0,6 times the projected area.



**Vry ruimtes van kraglyne**

15. (1) Die leweransier of gebruiker moet toesien dat—

(a) die minimum vry ruimtes van elektriese geleiers en ander drade van kraglyne, uitgesonderd lugverbruiksaansluitings en lyngelers met 'n spanning van hoogstens 1,1 kV w.g.k. wat bestaan uit geïsoleerde draad van 'n soort wat voldoen aan 'n veiligheidsstandaard wat vir hierdie doel kragtens artikel 36 van die Wet by hierdie regulasies ingelyf is, nie minder is nie as die ruimtes wat in die volgende tabel aangedui word:

**Clearances of power lines**

15. (1) The supplier or user shall cause—

(a) the minimum clearances of electric conductors and other wires of power lines, excluding overhead service connections and line conductors having a voltage not exceeding 1,1 kV r.m.s. consisting of insulated wire of a type which complies with a safety standard incorporated for this purpose in these regulations under section 36 of the Act, to be not less than the clearances indicated in the following table:

| Maksimum spanning, kV w.g.k. fase-tot-fase, waarvoor isolasie ontwerp is | Minimum veiligheidsvryruimte | Minimum vry ruimte in meter     |                                 |                                                                                            |                                                                      |                                                                 |
|--------------------------------------------------------------------------|------------------------------|---------------------------------|---------------------------------|--------------------------------------------------------------------------------------------|----------------------------------------------------------------------|-----------------------------------------------------------------|
|                                                                          |                              | Bokant grond buite dorpsgebiede | Bokant grond binne dorpsgebiede | Bokant paaie in dorpsgebiede, geproklameerde paaie buite dorpsgebiede, spoorweë en tremweë | Na kommunikasie lyne, ander kraglyne of tussen kraglyne en vangnette | Na geboue, pale en strukture wat nie deel van kraglyne vorm nie |
| 1,1 of minder .....                                                      | —                            | 4,9                             | 5,5                             | 6,1                                                                                        | 0,6                                                                  | 3,0                                                             |
| 7,2 .....                                                                | 0,15                         | 5,0                             | 5,5                             | 6,2                                                                                        | 0,7                                                                  | 3,0                                                             |
| 12 .....                                                                 | 0,20                         | 5,1                             | 5,5                             | 6,3                                                                                        | 0,8                                                                  | 3,0                                                             |
| 24 .....                                                                 | 0,32                         | 5,2                             | 5,5                             | 6,4                                                                                        | 0,9                                                                  | 3,0                                                             |
| 36 .....                                                                 | 0,43                         | 5,3                             | 5,5                             | 6,5                                                                                        | 1,0                                                                  | 3,0                                                             |
| 48 .....                                                                 | 0,54                         | 5,4                             | 5,5                             | 6,6                                                                                        | 1,1                                                                  | 3,0                                                             |
| 72 .....                                                                 | 0,77                         | 5,7                             | 5,7                             | 6,9                                                                                        | 1,4                                                                  | 3,2                                                             |
| 100 .....                                                                | 1,00                         | 5,9                             | 5,9                             | 7,1                                                                                        | 1,6                                                                  | 3,4                                                             |
| 145 .....                                                                | 1,45                         | 6,3                             | 6,3                             | 7,5                                                                                        | 2,0                                                                  | 3,8                                                             |
| 245 .....                                                                | 1,85                         | 6,7                             | 6,7                             | 7,9                                                                                        | 2,4                                                                  | 4,2                                                             |
| 300 .....                                                                | 2,35                         | 7,2                             | 7,2                             | 8,4                                                                                        | 2,9                                                                  | 4,7                                                             |
| 362 .....                                                                | 2,90                         | 7,8                             | 7,8                             | 9,0                                                                                        | 3,5                                                                  | 5,3                                                             |
| 420 .....                                                                | 3,20                         | 8,1                             | 8,1                             | 9,3                                                                                        | 3,8                                                                  | 5,6                                                             |
| 800 .....                                                                | 5,50                         | 10,4                            | 10,4                            | 11,6                                                                                       | 6,1                                                                  | 8,5                                                             |
| 533 kV g.s.* .....                                                       | 3,70                         | 8,6                             | 8,6                             | 9,8                                                                                        | 4,3                                                                  | 6,1                                                             |

\* Maksimum spanning na aarde waarvoor die isolasie ontwerp is.

| Maximum voltage for which insulation is designed, kV r.m.s. phase-to-phase | Minimum safety clearance | Minimum clearance in metres    |                           |                                                                                     |                                                                              |                                                                    |
|----------------------------------------------------------------------------|--------------------------|--------------------------------|---------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------|--------------------------------------------------------------------|
|                                                                            |                          | Above ground outside townships | Above ground in townships | Above roads in townships, proclaimed roads outside townships, railways and tramways | To communication lines, other power lines or between power lines and cradles | To buildings, poles and structures not forming part of power lines |
| 1,1 or less .....                                                          | —                        | 4,9                            | 5,5                       | 6,1                                                                                 | 0,6                                                                          | 3,0                                                                |
| 7,2 .....                                                                  | 0,15                     | 5,0                            | 5,5                       | 6,2                                                                                 | 0,7                                                                          | 3,0                                                                |
| 12 .....                                                                   | 0,20                     | 5,1                            | 5,5                       | 6,3                                                                                 | 0,8                                                                          | 3,0                                                                |
| 24 .....                                                                   | 0,32                     | 5,2                            | 5,5                       | 6,4                                                                                 | 0,9                                                                          | 3,0                                                                |
| 36 .....                                                                   | 0,43                     | 5,3                            | 5,5                       | 6,5                                                                                 | 1,0                                                                          | 3,0                                                                |
| 48 .....                                                                   | 0,54                     | 5,4                            | 5,5                       | 6,6                                                                                 | 1,1                                                                          | 3,0                                                                |
| 72 .....                                                                   | 0,77                     | 5,7                            | 5,7                       | 6,9                                                                                 | 1,4                                                                          | 3,2                                                                |
| 100 .....                                                                  | 1,00                     | 5,9                            | 5,9                       | 7,1                                                                                 | 1,6                                                                          | 3,4                                                                |
| 145 .....                                                                  | 1,45                     | 6,3                            | 6,3                       | 7,5                                                                                 | 2,0                                                                          | 3,8                                                                |
| 245 .....                                                                  | 1,85                     | 6,7                            | 6,7                       | 7,9                                                                                 | 2,4                                                                          | 4,2                                                                |
| 300 .....                                                                  | 2,35                     | 7,2                            | 7,2                       | 8,4                                                                                 | 2,9                                                                          | 4,7                                                                |
| 362 .....                                                                  | 2,90                     | 7,8                            | 7,8                       | 9,0                                                                                 | 3,5                                                                          | 5,3                                                                |
| 420 .....                                                                  | 3,20                     | 8,1                            | 8,1                       | 9,3                                                                                 | 3,8                                                                          | 5,6                                                                |
| 800 .....                                                                  | 5,50                     | 10,4                           | 10,4                      | 11,6                                                                                | 6,1                                                                          | 8,5                                                                |
| 533 kV d.c.* .....                                                         | 3,70                     | 8,6                            | 8,6                       | 9,8                                                                                 | 4,3                                                                          | 6,1                                                                |

\* Maximum voltage to earth for which insulations is designed.

Met dien verstande dat hierdie syfers gebaseer is op die veronderstelling dat vry ruimtes bepaal word vir 'n minimum geleiertemperatuur van 50 °C en 'n swaaihoek ekwivalent aan 'n winddruk van 500 Pa: Met dien verstande voorts dat waar die kraglyngelers onder normale omstandighede teen 'n hoër temperatuur as 50 °C werk, die vry ruimtes teen die hoër temperatuur waarby die geleiers werk, in ooreenstemming moet wees met die vry ruimtes soos in die tabel aangedui;

Provided that these figures are based on the assumption that clearances shall be determined for a minimum conductor temperature of 50 °C and a swing angle corresponding to a wind pressure of 500 Pa; Provided further that where under normal conditions power line conductors operate at a temperature above 50 °C, the clearance at the higher temperature at which the conductors operate shall be in accordance with the clearance indicated in the table;

(b) waar 'n kraglyn water kruis, die vry ruimte tussen geleiers of ander drade en die normale hoogwatervlak nie minder is nie as die ruimtes voorgeskryf vir kraglyne bokant die grond buite dorpsgebiede: Met dien verstande dat indien die eienaar van die grond waarop die water geleë is, 'n groter vry ruimte verlang en geen ooreenkoms bereik kan word nie, die geskil na die hoofinspekteur vir beslissing verwys moet word; en

(c) die afstand van enige kraglyn vanaf 'n springstofmagasyn voldoen aan die vereistes van die Wet op Ontploffbare Stowwe, 1956 (Wet 26 van 1956).

(2) Niemand mag enige pad, spoorweg, tremweg, kommunikasielyn, ander kraglyn, gebou of struktuur onder of in die nabyheid van 'n kraglyn bou of enige materiaal of grond onder of in die nabyheid van 'n kraglyn plaas sodat dit op die minimum vry ruimtes voorgeskryf in subregulasie (1), inbreuk maak nie.

(3) Niemand mag persoonlik of met enige voorwerp inbreuk maak op die minimum veiligheidsvryruimte voorgeskryf in subregulasie (1) nie en niemand mag vereis of toelaat dat enige ander persoon aldus inbreuk maak nie behalwe met die toestemming van die leweransier of gebruiker van die kraglyn.

(4) Die leweransier of gebruiker van kraglyne moet plantegroei beheer ten einde te verhoed dat daar inbreuk gemaak word op die minimum veiligheidsvryruimte van die kraglyne, en die eienaar van sodanige plante moet dié beheer toelaat.

#### **Beskerming van stutte**

16. Die gebruiker moet toesien dat alle stutte van die traliesoort wat gebruik word om luggeleiers te dra, toereikend beskerm is om te voorkom dat ongemagtigde persone gevaarlik naby die geleiers kan kom deur teen sodanige stutte op te klim, en 'n inspekteur kan van 'n gebruiker vereis om enige ander soort stut insgelyks te beskerm.

#### **Isolatore en toebehore**

17. Die leweransier of gebruiker moet toesien dat die veiligheidsfaktor van lynisolatore en toebehore, gebaseer op die soortgetoetste breeksterkte van sodanige lynisolatore of toebehore, minstens 2,5 is.

#### **Geleiers**

18. Die leweransier of gebruiker moet toesien dat die veiligheidsfaktor vir elke lyngeleier met inbegrip van lasse, minstens 2,5 is, welke faktor gebaseer moet wees op die aangeslane breetreksterkte van die geleier en bereken moet word op die veronderstelling dat die lyngeleier 'n temperatuur van  $-5^{\circ}\text{C}$  het en dat dit terselfdertyd onderwerp word aan 'n winddruk reghoekig met die lyn, wat gelykstaan met 700 Pa op 0,6 van die geprojekteerde oppervlakte van die geleiers.

#### **Lugverbruiksaansluitings en lugverbruiksgeleiers**

19. (1) Geen leweransier of gebruiker mag vereis of toelaat dat 'n lugverbruiksaansluiting elders as by 'n stutplek aan die leweransier se kragnet verbind word nie.

(2) Elke leweransier of gebruiker moet sorg dat elke deel van—

(a) lugverbruiksaansluitings; en

(b) lugverbruiksgeleiers van een gebou na 'n ander, uit 'n soort geïsoleerde draad bestaan wat voldoen aan 'n veiligheidstandaard wat vir hierdie doel kragtens artikel 36 van die Wet by hierdie regulasies ingelyf is.

(3) Geen leweransier of gebruiker mag 'n gebou deur middel van lugverbruiksgeleiers met elektriese energie verbind nie tensy sodanige verbinding met die gebou gedoen word deur middel van 'n klemkas van 'n soort wat deur die hoofinspekteur goedgekeur is, of op 'n ander wyse wat insgelyks goedgekeur is.

(b) the clearances of conductors and other wires over the normal high-water level of power lines crossing over water to be not less than the values for power lines above the ground outside townships: Provided that if the owner of the land on which the water is situated requires a greater clearance and no agreement can be reached, the dispute shall be referred to the chief inspector for a decision; and

(c) the distance of any power line from an explosives magazine to comply with the requirements of the Explosives Act, 1956 (Act 26 of 1956)

(2) No person shall construct any road, railway, tramway, communication line, other power line, building or structure or place any material or soil under or in the vicinity of a power line which will encroach on the appropriate minimum clearances prescribed in terms of subregulation (1).

(3) No person shall encroach in person or with objects on the minimum safety clearances prescribed in subregulation (1) or require or permit any other person to do so except by permission of the supplier or user operating the power line.

(4) The supplier or user, of power lines shall control vegetation in order to prevent it from encroaching on the minimum safety clearance of the power lines and the owner of the vegetation shall permit such control.

#### **Protection of supports**

16. The user shall ensure that all supports of the lattice type which are used to carry overhead conductors are adequately protected in order to prevent any unauthorised person from coming into dangerous proximity of the conductors by climbing such supports, and an inspector may require a user to protect a support of any other type similarly.

#### **Insulators and fittings**

17. The supplier or user shall ensure that the factor of safety of line insulators and fittings is at least 2,5 based on the type-tested breaking-strength of such insulators or fittings.

#### **Conductors**

18. The supplier or user shall ensure that the factor of safety of every line conductor, including joints, is at least 2,5, which factor shall be based on the rated ultimate tensile strength of the conductor and shall be calculated on the assumption that the line conductor is at a temperature of  $-5^{\circ}\text{C}$  and that it is simultaneously subjected to a wind pressure at right angles to the line equivalent to 700 Pa on 0,6 of the projected area of the conductors.

#### **Overhead service connections and overhead service conductors**

19. (1) No supplier or user shall require or permit any overhead service connection to be connected to the supplier's mains elsewhere than at a point of support.

(2) Every supplier or user shall cause every part of—

(a) overhead service connections; and

(b) overhead service conductors from one building to another,

to consist of insulated wire of a type which complies with a safety standard incorporated for this purpose in these regulations under section 36 of the Act.

(3) No supplier or user shall connect electrical energy to a building by means of overhead conductors unless the connection to the building is by means of a connector box of a type approved by the chief inspector, or by other means similarly approved.



**Oorgange**

20. (1) Waar 'n kraglyn 'n geproklameerde pad, spoorweg of tremweg of kommunikasielyn wat deur die Posmeester-generaal geproklameer is, kruis, moet die leweransier of gebruiker sorg dat die vry ruimtes aan die vereistes van regulasie 15 voldoen en moet hy verder toesien dat—

(a) elke struktuur wat 'n kruisspan stut, so ontwerp is dat dit die belastinge kan weestaan wat dit opgelê kan word as enige fasegeleier of aardgeleier sou breek;

(b) elke struktuur wat 'n kruisspan stut, sover dit redelikerwys uitvoerbaar is, so geplaas word dat dit nie aan die diens wat dit kruis, sal raak ingeval dit omval nie;

(c) onderworpe aan die beperkings in paragraaf (b), een van die strukture wat 'n kruisspan stut, so na aan die kruispunt geplaas word as wat redelikerwys uitvoerbaar is;

(d) die vry ruimte van die kruisspan waar dit 'n geproklameerde pad kruis, nie minder as 4,5 m sal wees nie in die geval van 'n gebreekte fasegeleier in 'n ander span as die kruisspan;

(e) pantserstange of vonkhorings aangebring word aan die lewendige ente van vaste en hangisolatore aan minstens die eerste drie strukture aan elke kant van die kruising as die maksimum spanning waarvoor die kraglyn ontwerp is, 1,1 kV w.g.k. te bowe gaan; andersins moet duplikaatgeleiers wat aan mekaar gekoppel is op afstande van nie meer as 1,5 m nie, in die kruisspan voorsien word en met duplikaatparallelisolatore ondersteun word, en vir kraglyne op vaste isolatore moet die duplikaatgeleiers minstens 1,5 m verby die stutte aan elke kant van die kruisspan strek;

(f) die afwyking van 'n reghoekige kruising oor 'n kommunikasielyn van die Departement van Pos- en Telekommunikasiewese of van die Suid-Afrikaanse Vervoerdienste hoogstens 30 grade is vir lyne met 'n spanning van 48 kV w.g.k. en meer, en hoogstens 45 grade is vir lyne minder as 48 kV w.g.k.; en

(g) die vry ruimtes voldoen aan die vereistes van regulasie 15 en van paragrawe (b) en (c) van hierdie subregulasie in gevalle waar 'n kraglyn 'n ander kraglyn kruis:

Met dien verstande dat die hoofinspekteur enige afwyking van hierdie vereistes soos in hierdie subregulasie uiteengesit, op sodanige voorwaardes as wat hy bepaal, kan goedkeur.

(2) Die leweransier of gebruiker moet toesien dat iedere lugverbruiksaan sluiting wat oor kaal kommunikasielyne van die Departement van Pos- en Telekommunikasiewese loop, minimum vry ruimtes tussen die lugverbruiksaan sluiting en die kommunikasielyne by die kruispunte van 0,5 m het, en die lugverbruiksaan sluiting mag nie onderdeur kaal kommunikasielyne loop nie.

**Kaal geleiers op persele**

21. Die gebruiker moet kaal geleiers, behalwe geleiers van kraglyne, wat nie geheel en al geïsoleer kan word nie, soos kraantralliedrade, en wat op 'n perseel geïnstalleer is, so plaas dat dit onopsetlike aanraking daarmee voorkom, en moet waarskuwingskennisgewings opvallend by sulke geleiers vertoon.

**Skemas wat aan die Posmeester-generaal voorgelê moet word**

22. (1) Die leweransier moet, voordat daar met die installering van 'n distribusieskema of die uitbreiding van 'n skema begin word, volledige planne in tweevoud aan die Posmeester-generaal en, indien nodig, aan die Hoofbestuurder van die Suid-Afrikaanse Vervoerdienste voorlê vir die doel om deur onderlinge ooreenkoms te besluit oor die

**Crossings**

20. (1) Where a power line crosses a proclaimed road, railway or tramway or a communication line proclaimed by the Postmaster General, the supplier or user shall cause the clearance to comply with the requirements of regulation 15 and shall further cause—

(a) every structure supporting a crossing span to be designed in such a manner that it will be able to withstand the loads that may be imposed upon it should a breakage of any phase conductor or earth conductor occur;

(b) every structure supporting a crossing span, as far as is reasonably practicable, to be located so that it will not touch the service crossed, should it overturn;

(c) subject to the restrictions in paragraph (b), one of the structures supporting a crossing span to be located as close to the point of crossing as is reasonably practicable;

(d) the clearance of the crossing span where it crosses a proclaimed road to be not less than 4,5 m in the case of a broken phase conductor in a span other than the crossing span;

(e) armour rods or arcing horns to be fitted at the live ends of suspension and rigid insulators on at least the first three structures on each side of the crossing if the maximum voltage for which the power line is designed exceeds 1,1 kV r.m.s.; alternatively, duplicate conductors, tied together at intervals of not more than 1,5 m shall be provided in the crossing span and shall be supported by duplicate parallel insulators, and for lines on rigid insulators the duplicate conductors shall extend at least 1,5 m beyond the supports on each side of the crossing span;

(f) the deviation from a right angle crossing over a communication line of the Department of Posts and Telecommunications or the South African Transport Services to be not greater than 30 degrees for lines with a voltage of 48 kV r.m.s. and above, and not greater than 45 degrees for lines below 48 kV r.m.s.; and

(g) the clearance to comply with the requirements of regulation 15 and with paragraphs (b) and (c) of this subregulation in cases where a power line crosses another power line:

Provided that the chief inspector may approve any deviation of these requirements as specified in this subregulation subject to such conditions as he may determine.

(2) The supplier or user shall cause every overhead service connection which crosses over bare communication lines of the Department of Posts and Telecommunications to have minimum clearances between the overhead service connection and the communication lines at the points of crossing of 0,5 m and the overhead service connection shall not cross below bare communication lines.

**Bare conductors on premises**

21. The user shall cause bare conductors other than conductors of a power line which cannot be completely insulated, such as crane trolley wires, and which are installed on premises, to be so placed as to prevent accidental contact therewith and warning notices to be prominently displayed at such conductors.

**Schemes to be submitted to the Postmaster General**

22. (1) The supplier shall, before commencing the installation of any distribution scheme or extension to a scheme, submit his complete proposals in duplicate to the Postmaster General and, where necessary to the General Manager of the South African Transport Services for the purpose of deciding by mutual agreement the methods or devices to be

metodes of hulpmiddels wat die leweransier moet gebruik om te voorkom dat daar by bestaande en voorgestelde kommunikasielyne en spoorlyne toestande kan ontstaan wat vir die publiek of vir die betrokke werknemers gevaarlik kan wees, en waar sodanige toestande sonder groot koste vir enige van die partye vermy kan word deur die wysiging van die voorgestelde planne van of die leweransier of die Departement van Pos- en Telekommunikasiewese of die Suid-Afrikaanse Vervoerdienste, na gelang van die geval, moet sodanige wysiging aangebring word: Met dien verstande dat hierdie subregulasie nie op lugverbruiks-aansluitings van toepassing is nie.

(2) Indien geen ooreenkoms soos in subregulasie (1) bedoel, tussen die Posmeester-generaal of die Hoofbestuurder van die Suid-Afrikaanse Vervoerdienste en die leweransier bereik kan word nie, moet die geskil na die hoofinspekteur verwys word vir 'n beslissing.

(3) Behoudens die bepaling van subregulasie (4) moet die leweransier alle onkoste betaal wat voortspruit uit 'n ooreenkoms in subregulasie (1) bedoel.

(4) In gevalle waar veranderings aan die ontwerp van 'n bestaande kraglyn wat ooreenkomstig subregulasies (1) en (2) opgerig is, of bykomende toestelle, nodig word as gevolg van verkeer deur die Posmeester-generaal of die Hoofbestuurder van die Suid-Afrikaanse Vervoerdienste of enige ander sodanige liggaam, moet sodanige veranderings deur die leweransier aangebring word op rekening van die liggaam op wie se verkeer die veranderings aangebring is.

#### **Misdrywe en strawwe**

23. Enigiemand wat 'n bepaling van regulasies 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 17, 18, 19, 20, 21 of 22 (1) oortree of versuim om daaraan te voldoen, is aan 'n misdryf skuldig en is by skuldigbevinding strafbaar met 'n boete van hoogstens R1 000 of met gevangenisstraf vir 'n tydperk van hoogstens ses maande en, in die geval van 'n voortdurende misdryf, met 'n bykomende boete van R5 of met bykomende gevangenisstraf van een dag vir elke dag waarop die misdryf voortduur: Met dien verstande dat die duur van sodanige bykomende gevangenisstraf in geen geval 90 dae te bowe gaan nie.

#### **Herroeping van regulasies**

24. Die volgende regulasies word hierby herroep:

(a) Regulasies C51 (3), C57 en C64, gepubliseer by Goewermentskennisgewing R. 929 van 28 Junie 1963;

(b) regulasies C52, C55 en C58, gepubliseer by Goewermentskennisgewing R. 109 van 26 Januarie 1973;

(c) regulasies C56, C59, C60, C61, C62, C63, C65, C66, C67, C68, C69, C70 en C71, gepubliseer by Goewermentskennisgewing R. 929 van 28 Junie 1963, soos gewysig by Goewermentskennisgewing R. 1880 van 11 September 1981.

#### **Kort titel**

25. Hierdie regulasies heet die Elektriese Masjinerie-regulasies, 1988.

**No. R. 1594**

**5 Augustus 1988**

WET OP MASJINERIE EN BEROEPSVEILIGHEID,  
1983

ELEKTRIESE MASJINERIETREGULASIES  
INLYWING VAN VEILIGHEIDSTANDAARDE

Kragtens die bevoegdheid my verleen by artikel 36 (1) van die Wet op Masjinerie en Beroepsveiligheid, 1983 (Wet 6 van 1983), lyf ek, Pieter Theunis Christiaan du Plessis, Minister van Mannekrag, hierby die veiligheidsstandaarde gespesifiseer in die Bylae hiervan in by die Elektriese Masjinerietregulasies, 1988.

P. T. C. DU PLESSIS,  
Minister van Mannekrag.

adopted by the supplier to avoid the creation of conditions on existing and projected communication and railway lines which may be dangerous to the public or to the employees concerned, and where such conditions can be avoided without material cost to either party by the amendment of either the projected plans of the supplier or the projected plans of the Department of Posts and Telecommunications or the South African Transport Services, as the case may be, such amendments shall be made: Provided that this subregulation shall not apply to overhead service connections.

(2) If an agreement between the Postmaster General or the General Manager of the South African Transport Services and the supplier as contemplated in subregulation (1) cannot be reached, the dispute shall be referred to the chief inspector for a decision.

(3) Subject to the provisions of subregulation (4), the supplier shall pay all the costs arising from an agreement referred to in subregulation (1).

(4) In cases where an alteration to the design of an existing power line which has been erected in accordance with sub-regulations (1) and (2), or devices additional thereto, becomes necessary on account of representations made by the Postmaster General or by the General Manager of the South African Transport Services or by any other such body, such alteration shall be effected by the supplier at the expense of the body at whose representation the change has been brought about.

#### **Offences and penalties**

23. Any person who contravenes or fails to comply with a provision of regulation 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 17, 18, 19, 20, 21 or 22 (1) shall be guilty of an offence and liable on conviction to a fine not exceeding R1 000 or to imprisonment for a period not exceeding six months and, in the case of a continuous offence, to an additional fine of R5 or to additional imprisonment of one day for each day on which the offence continues: Provided that the period of such additional imprisonment shall in no case exceed 90 days.

#### **Withdrawal of regulations**

24. The following regulations are hereby withdrawn:

(a) Regulations C51 (3), C57 and C64, published under Government Notice R. 929 of 28 June 1963;

(b) regulations C52, C55 and C58, published under Government Notice R. 109 of 26 January 1973;

(c) regulations C56, C59, C60, C61, C62, C63, C65, C66, C67, C68, C69, C70 and C71, published under Government Notice R. 929 of 28 June 1963, as amended by Government Notice R. 1880 of 11 September 1981.

#### **Short title**

25. These regulations shall be called the Electrical Machinery Regulations, 1988.

**No. R. 1594**

**5 August 1988**

MACHINERY AND OCCUPATIONAL SAFETY ACT,  
1983

ELECTRICAL MACHINERY REGULATIONS  
INCORPORATION OF SAFETY STANDARDS

Under and by virtue of the powers vested in me by section 36 (1) of the Machinery and Occupational Safety Act, 1983 (Act 6 of 1983), I, Pieter Theunis Christiaan du Plessis, Minister of Manpower, hereby incorporate into the Electrical Machinery Regulations, 1988, the safety standards specified in the Schedule hereto.

P. T. C. DU PLESSIS,  
Minister of Manpower.



## BYLAE

## 1. Regulasie 8 (1)

Suid-Afrikaanse Buro vir Standaarde, gebruikskode

SABS 0108: Die klassifikasie van gevaarlike gebiede en die kies van elektriese apparaat vir gebruik in sulke gebiede.

## 2. Regulasie 8 (2)

Suid-Afrikaanse Buro vir Standaarde, standaardspesifikasies

SABS 314: Vlamdigte omhulsels vir elektriese apparaat;

SABS 549: Intrinsiek veilige elektriese apparaat;

SABS 969: Omhulsels vir elektriese apparaat (Stofontvlamdig of spuitwaterdig of albei);

SABS 970: Vonkvrye elektriese uitrusting vir gebruik in Klas 1-, Afdeling 2-gebiede;

SABS 1031: Tipe 'e'-apparaat vir gebruik in vlambare gasatmosfeer;

SABS 1020: Die elektriese onderdele van vrystaande kragvulmasjiene vir vlambare vloeistof;

Suid-Afrikaanse Buro vir Standaarde, gebruikskode

SABS 0119: Die vermindering van ontploffingsgevaar deur afsondering, ventilasie en drukreëling van elektriese uitrusting;

British Standards, spesifikasies

B.S. 229: Flameproof enclosure of electric apparatus;

B.S. 1259: Intrinsically safe electrical apparatus and circuits for use in explosive atmospheres;

B.S. 5501: Electrical apparatus for potentially explosive atmospheres, Parts 1, 3, 4, 5, 6 and 7 (word onderskeidelik ook EN 50 014, 50 016, 50 017, 50 018, 50 019 en 50 020 genoem);

B.S. 4683: Electrical apparatus for explosive atmospheres, Parts 2, 3 and 4;

B.S. 4533, section 102, 51: Luminaires with type of protection N;

British Approvals Service for Electrical Equipment in Flammable Atmospheres (BASEEFA), SFA standards for flameproof and equivalent equipment;

Verband Deutscher Elektrotechniker (VDE), spesifikasie

VDE 0171: Construction and testing of electrical apparatus for use in explosive gas atmospheres for industries other than mining;

European Committee for Electrotechnical Standardization, spesifikasies

EN 50014 en 50016 tot 50020: Electrical apparatus for use in potentially explosive atmospheres;

Underwriters Laboratories (UL) standards for—

(a) explosion proof electrical equipment;

(b) intrinsically safe electrical equipment; and

(c) dust-ignition proof electrical equipment;

National Fire Protection Association (NFPA) standard No. 493 vir wesenlik veilige apparaat in gebruik in gevaarlike gebiede;

Factory Mutual Research Corporation, FM standard for intrinsically safe apparatus for use in Class 1, Division 1 locations and for non-incendive apparatus for use in Class 1 Division 2 locations;

Canadian Standards Association (CSA), standaard

C22.2 No. 30: Explosion proof enclosures for use in Class 1 hazardous locations;

## SCHEDULE

## 1. Regulation 8 (1)

South African Bureau of Standards, code of practice

SABS 0108: The classification of hazardous locations and the selection of electrical apparatus for use in such locations.

## 2. Regulation 8 (2)

South African Bureau of Standards, standard specifications

SABS 314: Flameproof enclosures for electrical apparatus;

SABS 549: Intrinsically safe electrical apparatus;

SABS 969: Enclosures for electrical apparatus (Dust-ignition-proof or hose-proof or both);

SABS 970: Non-sparking electrical equipment for use in Class I, Division 2 locations;

SABS 1031: Type 'e' apparatus for use in flammable gas atmospheres;

SABS 1020: Electrical components for free-standing power-operated dispensing devices for flammable liquids;

South African Bureau of Standards, code of practice

SABS 0119: Reduction of explosive hazards by segregation, ventilation and pressurization of electrical equipment;

British Standards, specifications

B.S. 229: Flameproof enclosure of electrical apparatus;

B.S. 1259: Intrinsically safe electrical apparatus and circuits for use in explosive atmospheres;

B.S. 5501: Electrical apparatus for use in potentially explosive atmospheres, Parts, 1, 3, 4, 5, 6 and 7 (also respectively referred to as EN 50 014, 50 016, 50 017, 50 018, 50 019 and 50 020);

B.S. 4683: Electrical apparatus for explosive atmospheres Parts 2, 3 and 4;

B.S. 4533, Section 102, 51: Luminaires with type of protection N;

British Approvals Service for Electrical Equipment in Flammable Atmospheres (BASEEFA), SFA standards for flameproof and equivalent equipment;

Verband Deutscher Elektrotechniker (VDE), specification

VDE 0171: Construction and testing of electrical apparatus for use in explosive gas atmospheres for industries other than mining;

European Committee for Electrotechnical Standardization, specifications

EN 50014 and 50016 to 50020: Electrical apparatus for use in potentially explosive atmospheres;

Underwriters Laboratories (UL) standards for—

(a) explosion proof electrical equipment;

(b) intrinsically safe electrical equipment; and

(c) dust-ignition proof electrical equipment;

National Fire Protection Association (NFPA) standard No. 493 for intrinsically safe equipment in use in hazardous locations;

Factory Mutual Research Corporation, FM standard for intrinsically safe apparatus for use in Class I, Division 1 locations and for non-incendive apparatus for use in Class I Division 2 locations;

Canadian Standards Association (CSA), standards

C22.2 No. 30: Explosion proof enclosures for use in Class I hazardous locations;

- C22.2 No. 25: Enclosures for use in Class II, Groups E, F and G hazardous locations;  
Standards Association of Australia, spesifikasie  
AS 2480: Electrical equipment for explosive atmospheres: Flameproof enclosures—type of protection 'd'.
3. Regulasies 9 (1) (a) en 10 (2) (a)  
Suid-Afrikaanse Buro vir Standaarde, standaardspesifikasie  
SABS 767: Aardlekbeveiligingseenhede van die stroombalanstipe.
4. Regulasie 9 (1) (b)  
Suid-Afrikaanse Buro vir Standaarde, standaardspesifikasie  
SABS 743: Skeitstransformators vir gebruik by lae spannings.
5. Regulasie 9 (2) (b)  
Suid-Afrikaanse Buro vir Standaarde, standaardspesifikasie  
SABS 1157: Dubbelgeïsoleerde handgereedskap met elektriese motordrywing;  
International Commission On Rules For The Approval of Electrical Equipment (CEE), specification for Portable Motor Operated Tools, Publication 20;  
British Standards, spesifikasie  
B.S. 2769: Hand-held electric motor operated tools.
6. Regulasies 15 (1) (a) en 19 (2)  
Suid-Afrikaanse Buro vir Standaarde, spesifikasie  
SABS 150: Elektriese kables en buigsame koorde met polivinielchloried (PVC)-isolering.

- C22.2 No. 25: Enclosures for use in Class II Groups E, F and G hazardous locations;  
Standards Association of Australia, specification  
AS 2480: Electrical equipment for explosive atmospheres: Flameproof enclosures—type of protection 'd'.
3. Regulations 9 (1) (a) and 10 (2) (a)  
South African Bureau of Standards, standard specification  
SABS 767: Core balance earth leakage protection units.
4. Regulation 9 (1) (b)  
South African Bureau of Standards, standard specification  
SABS 743: Low-voltage insulating transformers.
5. Regulation 9 (2) (b)  
South African Bureau of Standards, standard specification  
SABS 1157: Double-insulated hand-held electric motor operated tools;  
International Commission On Rules For The Approval of Electrical Equipment (CEE), specification for Portable Motor Operated Tools, Publication 20;  
British Standards, specification  
B.S. 2769: Hand-held electric motor operated tools.
6. Regulations 15 (1) (a) and 19 (2)  
South African Bureau of Standards, specification  
SABS 150: Polyvinyl chloride (PVC)-insulated electric cables and flexible cords.

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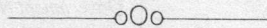


# BELANGRIK!!

## Plasing van tale:

### *Staatskoerante*

1. Hiermee word bekendgemaak dat die omruil van tale in die *Staatskoerant* jaarliks geskied met die eerste uitgawe in Oktober.
2. Vir die tydperk 1 Oktober 1987 tot 30 September 1988 word Afrikaans EERSTE geplaas.
3. Hierdie reëling is in ooreenstemming met dié van die Parlement waarby koerante met Wette ens. die taalvolgorde deurgaans behou vir die duur van die sitting.
4. *Dit word dus van u, as adverteerder, verwag om u kopie met bogenoemde reëling te laat strook om onnodige omskakeling en stylredigering in ooreenstemming te bring.*



# IMPORTANT!!

## Placing of languages:

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1. Notice is hereby given that the interchange of languages in the *Government Gazette* will be effected annually from the first issue in October.
2. For the period 1 October 1987 to 30 September 1988, Afrikaans is to be placed FIRST.
3. This arrangement is in conformity with Gazettes containing Acts of Parliament etc. where the language sequence remains constant throughout the sitting of Parliament.
4. *It is therefore expected of you, the advertiser, to see that your copy is in accordance with the above-mentioned arrangement in order to avoid unnecessary style changes and editing to correspond with the correct style.*

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