

**LIVESTOCK WELFARE  
COORDINATING COMMITTEE**

# **GUIDELINE**

## **THE USE OF PRODDERS AND STUNNING DEVICES IN ABATTOIRS**

**Drawn up by the Livestock Welfare Coordinating Committee  
in furtherance of livestock welfare in South Africa**

**Revised: JULY 2020**

# **GUIDELINE FOR THE USE OF PRODDERS AND STUNNING DEVICES IN ABATTOIRS**

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Throughout the context of this Code the term livestock means cattle, sheep, pigs, and goats.

This CODE is to be read in conjunction with the Animals Protection Act, 1962

(Act 71 of 1962, as amended)

## FOREWORD

Poor publicity on animal cruelty in the livestock industry was experienced in the late seventies. The Livestock Welfare Coordinating Committee was consequently established in 1978. Members of twenty-three animal welfare organizations and organizations in the livestock industry and State coordinate efforts in the interest of livestock welfare. Participating members as recorded in November 2019 were as follows:

- < Livestock Animal Welfare Association
- < National Society for the Prevention of Cruelty to Animals
- < Red Meat Abattoir Association
- < SA Studbook
- < Red Meat Producers Organization
- < National Wool Growers Association
- < SA Federation of Livestock Auctioneers
- < Department of Agriculture Forestry and Fisheries
- < SA Pork Producers Organization
- < SA Veterinary Association
- < SA Feedlot Association
- < Red Meat Industry Forum
- < Milk Producers Organization
- < SA Bureau of Standards
- < International Meat Quality Assurance Services
- < SA Police Service
- < SA Ostrich Business Chamber
- < National Emergent Red Meat Producers Organization
- < Faculty of Veterinary Science
- < Department of Animal and Wildlife Sciences
- < Agency for Food Safety
- < Gauteng Department of Agriculture and Rural Development
- < Animal Welfare Working Group /DAFF

From an animal science point of view no conflict exists between the humane treatment of animals and good animal husbandry: Losses are prevented, and production efficiencies enhanced. Humane handling of livestock was also found to be beneficial to the shelf life and quality of meat.

The image of an industry furthermore reflects on its products and affects consumer demand. Unquestionably, therefore, the benefits of high standards of livestock welfare include profitability.

It is the Committee's objective to take the necessary actions to ensure the humane handling of slaughter stock from production to slaughter.

The aim of this guideline: **Guideline for the use of prodders and stunning devices in abattoirs**, is to set norms for the acceptable treatment of livestock.

The guideline was approved by the various organizations representing people affected by these guidelines. The guideline was legally edited by the National Department of Agriculture's Sub-directorate: Legal Services.

**The moral conscience and financial interests of the Livestock and Meat Industry can best be served by promoting the wellbeing of its animals. The wellbeing of the animals in our care shall always be considered. Cruel or inhumane handling of livestock shall be avoided during all the stages of production, transport, marketing, and slaughter. The welfare of livestock can only be achieved if, at all levels within the industry, they are handled with patience and tolerance and with an understanding of their instinctual and natural behaviour and basic needs. Every reasonable effort should be made to protect the animals from physical injury, undue stress or suffering, harmful elements, or deprivation of essential needs. The financial and moral benefits to the Meat Industry will be further enhanced if the handling of livestock is accompanied by an awareness that they are living, sentient beings.**

## 1 Objectives of the guidelines

The objective of these guidelines is to include in any person involved in the abattoir industry a disposition that will include him/her:

- a) To ensure responsible and humane handling of livestock at all times and in all situations in order to not cause unnecessary suffering.
- b) To introduce reasonable operating norms to all persons involved in the movement and slaughtering of livestock.
- c) To aim to positive preventative measures with the view to preventing the cruelty and financial loss associated with severe injuries, which could also include condemnation due to bruising and death.

## 2 General

These comments are not intended as a drafting of legislation, but as practical guidance for the Meat and Abattoir industries, although these recommendations might be used as a basis for legislation change.

Many factors must be taken into account when deciding upon the best system for slaughtering stock at abattoirs. The principal consideration is the welfare of the animals, but other factors include capital and running costs, workers safety and ease of handling animals and carcasses and the effect of the method of slaughter on the quality and shelf life of the meat.

It should be mandatory for all persons involved in the handling and slaughter of livestock to receive adequate training in correct techniques and that further instructions be given whenever new techniques are introduced.

There are no serious conflict of interest, aims or objectives between animal welfare organizations and the meat industry for there is a vast amount of evidence available, which indicates that the majority of systems which are most humane, are also the most effective and yield the most economically able meat product.

## 3 Observations

It has been frequently observed that bruising, injuries, and subsequent increased condemnations, as well as attendant cruelty, avoidable stress, and financial loss result from incorrect use of electric prodders and stunning equipment.

The practice of suspending shackled animals before they have lapsed into insensibility is cruel and cannot be condoned. It is essential that all persons involved in the slaughtering procedures are made fully aware of the fact that in terms of the Animals Protection Act such malpractices constitutes an offence punishable in law.

The application of electric prodders (battery operated only) to the sensitive parts of the animals, such as the muzzle, mouth, ears, eyes, testes, vulva, or rectum are similarly considered to be cruel practices.

Animals must be kept in restraint for the shortest possible period to prevent them from becoming agitated and fractious, which will prevent the accurate and swift application of the stunning apparatus. The stun box, restraining conveyor and race leading thereto must therefore be used for its appropriate purpose and not for holding areas or procedures.

#### **4 Electric prodders**

Prodders deliver a powerful and painful shock. They should therefore be used with discretion and considered intention: e.g. a handler cannot reasonably expect a bovine to move forward by poking him in the face with an electric prodder, neither can he expect the animal to move forward when it is jammed in and there is no clear path in which the animal can move. To make an animal move forward, the handler must stand behind the shoulder and apply the prodder to its rear quarters. Handlers must not prod animals standing behind the one in front, in an attempt to force them to push the specific bovine forward. It is also necessary that handlers realize that continued or indiscriminate application of the prod usually causes the animal to become excited, balk and recalcitrant.

Electric prodders shall not be applied to sheep or pigs.

Handlers should be given the necessary training to understand the natural and instinctive behavior of different species of livestock in order to move them with the least possible stress to both the animal and himself.

Nevertheless, intelligent use of electric prods to move animals, especially cattle, is preferable to beating or tail twisting.

#### **5 Stunning**

Whether stunning is to be achieved by means of electric or captive bolt apparatus, the apparatus concerned shall be examined and tested before use each and every day it is to be used, and at adequate intervals during the day.

Continued use of any stunning apparatus is very exhausting, often dangerous and consideration should be given to relieve the operator before a level of exhaustion is reached that he becomes indifferent, insensitive, or careless.

Serious consideration should be given to providing the operator with effective ease of access to the animal to be stunned, so as to reduce avoidable elements of danger of effort. It is obvious therefore that a restrainer conveyor system is far more efficient than stun boxes or other apparatus which allows excess movement of the animal's head and body.

The apparatus should be such that stunning can be achieved with repeatable accuracy which requires that the operator can stand in safety close to the animal to reduce reaching and physical effort.

Operators must be made to understand that the stunning procedure whether electric or captive bolt renders the animal unconscious for only a very short period of time and that bleed out must be achieved whilst the animal is insensitive to pain and before it begins to recover consciousness. Therefore regardless of the system used the aim should be to ensure that both carotid arteries and jugular veins are cut and separated as expeditiously as physically possible.

Cutting both carotid arteries and jugular veins results in brain failure with consequent unconsciousness, but when only one carotid artery is cut brain failure will not occur within approximately seventy seconds. If the carotids are missed altogether and only the jugulars are cut the animal can take as long as five minutes to die.

With electrical stunning, it is necessary that the operator be trained and supervised to ensure that the correct current flows for the appropriately calculated period through the correctly positioned electrodes placed across the brain in order to ensure the efficiency of the electroplectic stunning.

Similarly, with the use of the captive bolt correct charge (grade of cartridge) in a suitable and efficiently maintained captive bolt pistol must be precisely and firmly applied to the head of the animal to be stunned.

#### **A) Practical Recommendations**

Head only electrical stunning in sheep, goats, and pigs

<b>Species</b>	<b>Minimum current level during stunning</b>	<b>Maximum stun/bleed interval</b>
Sheep & goats	1 Amp 90 Volts	60 seconds
Lambs & kids	0.6 Amps 90 Volts	60 seconds
Weaner pigs	1.3 Amps 110 Volts	60 seconds
Grown out pigs	1.3 Amps 250 Volts	60 seconds

#### **B) Period between stunning and bleeding**

International guidelines provide for special pre-cautions when stunning is reversible. The Terrestrial Health Code of the OIE (Chapter 7.5) Slaughter of animals- Item5) Recommend a maximum of stun to bleed interval of 20 seconds for electrical, as well as for the captive bolt method.

Although the Red Meat Regulations of the Meat Safety Act provide for an animal to be bled within 60 seconds after stunning (article 74) we advise abattoirs to follow the international guidelines of stun to bleed interval to 10 to 20 seconds for sheep and pigs.

In many cases and situations it is possible to shorten these times considerably and abattoir owners should also consider the provision in the regulations to bleed in a

horizontal position, but to bring the animal to a hanging position immediately after the bleeding incision is made. This will minimize the chance of stunned animals regaining any form of consciousness before they are killed by blood loss.

### **C) Factors relating to Electrical Stunning**

1. Time of application of electrodes is 5 to 7 seconds at 240 volt and 7 to 10 seconds at 180 volts.
2. Electrodes must be placed so that they span the brain. (shortest distance)
3. In order to ensure rapid brain death, follow exsanguination, it is imperative that both carotid arteries (or the blood vessels from which they arise) are severed.
4. An apparatus that produces a constant current (amperage) is preferred to one that produces a constant voltage.
5. The apparatus must have a visible current (amperage) sensor indicating current under load.
6. A suitable method of restraint which prevents movement offers advantages; these include more reliable stunning, worker safety and minimizing carcass quality defects.
7. Where any difficulty is experienced in correctly applying the stunning tongs to heavily horned sheep and goats, the captive bolt pistol should be utilized.
8. All large boars should be stunned by means of the captive bolt pistol.  
(Cognisance must be taken that in this event PSE (pale, soft and exudative meat result) may result)
9. In the case of sheep, the contact points of the stunning tongs must be long and reasonable sharp enough to penetrate the wool to ensure proper contact with the skin of the animal being stunned. In the case of pigs, the correct pig tongs must be used. Sheep tongs must not be used on pigs.
10. Pigs should be wetted prior to electric stunning.
11. Pigs may not be prodded.
12. The contact points of the stunning tongs must be cleaned and serviced regularly to ensure maximum current flow.
13. Not too many animals should be held in the stunning crush at one time. The animals as well as the stunning operator should be able to move around freely. The operator must have sufficient space in order to position himself behind the particular animal to be stunned.

**It is a requirement of the regulations to ensure that a written program and records of competence are provided for all workers on the correct slaughter techniques. From an animal welfare perspective this competence is especially important for the animal handlers, as well as for the stunning and bleeding operators.**

### **D) Captive bolt stunning of cattle, sheep, goats, and pigs**

Humane stunning and slaughtering of animals using the captive bolt method depends on three factors:

1. the position of the shot on the animal's head.
2. the speed of the bolt on impact with the head, and
3. the stun/bleed interval.

#### **E) Shooting position**

Heavily fleeced sheep and large boars should not be stunned with electric stunners but stunned with an appropriately charged captive bolt pistol.

##### **1. Cattle**

The frontal position must be employed. This is the intersection of imaginary lines connecting the outer canthi of each eye with the opposite ear. The poll position, on the back of the animal's head, does not offer an effective stun (may not necessarily rendered the animal unconscious, but merely leave it paralyzed) and should therefore not be allowed.

##### **2. Sheep and goats**

The shot must be aimed at the crown of the head between the ears and pointing straight down. Where the poll position must be used because of preference of horns, the shot should be placed immediately behind the base of the horns and aimed towards the mouth.

##### **3. Pigs**

The shot must be aimed about 2cm above the eye level, on the middle line and aimed upwards and into the head, horizontal to the body of the animal. Pigs that are stunned with a pistol tend to struggle a lot which could lead to muscle tension and eventually to PSE (pale, soft and exudative) meat.

#### **F) Bolt speed**

The bolt speed produced by captive bolt pistols will vary according to their design. A minimum bolt speed of 20m/sec for sheep and 45m/sec for cattle is recommended. However, these are only approximate guidelines, since it is the energy involved in the impact of the bolt with the animal's head which defines the effectiveness of the stun and this energy is influenced by the gun's design.

We trust that these guidelines will be practically implemented by abattoirs throughout South Africa and that it will inspire abattoir managers to ensure that animals are at all times handled and slaughtered in a humane manner.