STANDARDS FOR DIFFERENT CATEGORY OF ABATTOIR

ANNEXURE – XII: ABATTOIR CATEGORY – A

Those abattoirs approved by BAFRA as commercial purpose with a relatively high capacity of over 300 heads of animals per week and over 15,000 birds per week.

A. MINIMUM STANDARDS OF PLANS AND SPECIFICATIONS FOR CONSTRUCTION OF SLAUGHTER HOUSE - LARGE & SMALL ANIMAL

1. Approval

1.1 Construction of new premises should not commence and alterations to existing registered premises must not commence before the plans of the premises and associated specifications have been approved.

1.2 Where plans and specifications are modified during construction or alterations, amended plans and specifications must be submitted for approval.

1.3 Floor, wall and ceiling finishes, and surface finishes having direct contact with edible product, must not be used in the new premises or existing registered until the finishes have been approved.

1.4 Slaughtering establishments must request for inspection of the premises by the controlling authority -BAFRA before being considered for registration. 'Veterinary Inspected BHUTAN Logo' is awarded to the abattoir or plant when they comply with the standards laid down by BAFRA

2. Submission of plans

2.1 Two copies of plans, specifications and other information necessary to facilitate consideration of approval must be submitted to the controlling authority.

3. Plans

3.1 Plans must be drawn in accordance with the following:

- the paper size must be International A or B series and must not exceed 1189 mm x 841mm

- drawings must be legible, with sharp clear lines

- drawing of sites and building layouts must indicate the north point of the compass

- essential dimensions, including the dimensions of rooms and sections, must be shown

- the scale must not be less than:

- site plans - 1 :500

- floor plans - 1 : 50

4. Plans and specification requirements for new premises

4.1 Contour map

4.1.1 A contour map fully and clearly illustrating and describing the location of the applicant's premises, together with an aerial photograph if available, must be provided with the plans and specifications.

4.2 Site plan

4.2.1 A site plan of the entire premises showing the location of any buildings, railroad sidings, roadways and alleyways adjoining the plant must be provided. In addition, the site plan must show any streams, catch basins, water wells, reservoirs and storage tanks.

4.2.2 The external boundary of the premises that it is proposed to register as a registered establishment must be clearly indicated.

4.3 Floor plan

4.3.1 A floor plan of each level in all buildings must show the locations of the following:

- walls, partitions and posts
- doorways, windows and other openings
- rail systems for conveying carcass or parts
- chutes
- principal pieces of equipment
- hot water and cold water hose points
- handwashing facilities
- sterilizers
- stairways

4.4 **Roof plan**

4.4.1 A roof plan showing vents, roof mounted equipment and other relevant information must be provided.

4.5 **Section and elevation drawings**

4.5.1 Cross-section and elevation drawings of all buildings must be provided, and must show:

- the character and finish of floors, walls, partitions and ceilings
- the heights of ceilings
- principal places of equipment
- the height of any rails

4.6 **Drainage plan**

4.6.1 A detailed plan that shows how floor drainage, effluent, sewage and stormwater is collected and removed from all buildings must be submitted.

4.7 **Specifications and notations**

4.7.1 Specifications and notations must cover such items as the following:

- flow of operations
- source of water supply
- a description of the hot water supply
- protection of outer openings that would admit insects and other vermin.

ABATTOIR FACILITIES AND OPERATING REQUIREMENTS

PART I - SITE SELECTION AND APPROVAL

1. General Conditions

1.1 Adequate supply of potable water, electricity should be available to meet the anticipated peak demand.

1.2 Drainage facilities including disposal of works effluent, stormwater and site drainage and sewage disposal, must be available at site.

1.3 The area should be reasonably free of dust, and of odours, smoke, ash and other such things as are sometimes produced sawmills, oil refineries, city dumps and sewage disposal systems.

1.4 It is desirable that trees and natural landscaping be retained where possible.

1.5 Sites with undesirable soil types which can create drainage problems, waterlogging and flooding should be avoided.

1.6 The area of land required should be determined before selecting the site. Space should be sufficient for such things as holding yards, lairage, vehicular roadways, parking areas, effluent ponds and other ancillary constructions.

2 Expansion

2.1. Then planning the premises, careful consideration should be given to the design to allow space for expansion.

PART II - ABATTOIR CONSTRUCTION AND LAYOUT

1. General

1.1 No portion of abattoir should be used as living quarters.

1.2 Abattoirs should provide adequate working space for the satisfactory performance of all operations.

1.3 The construction should be sound and ensure adequate ventilation, good, natural or artificial lighting and easy cleaning. In addition, it should protect against the entrance and harbouring of insects, birds, rodents or other vermin.

1.4 The building and facilities of the abattoir should be kept in good repair at all times.

1.5 In all rooms in an abattoir or establishment other than the rooms provided for accommodation of workers and inspector:

1.5.1 Floors

- Floors should be impervious to moisture, non-toxic, non-absorbent, easy to clean and disinfect. They should be acid

resistant, relatively smooth but not slippery, evenly graded to drainage inlets so that liquid does not accumulate.

- Grouting used between tiles in floors should be impervious to liquids and of the minimum practical width.

- Floor joints should be sealed with material impervious to liquids and finished flush with the surface.

1.5.2 Internal walls:

- Walls should be impervious to moisture, smoothly finished, rust resistant, and resistant to or protected from impact, not readily subject to chipping or flaking, easy to clean and disinfect.

- Joints and fixing devices should be sealed to effectively to prevent entry of moisture.

- When walls are not of full height, they should be capped with a 45^0 sloping top.

- Where internal panel type construction is to be incorporated, other than in freezer stores or blast freezers, wall panels should be placed on a concrete plinth raised a minimum of 150 mm above the floor.

- Wall panel construction should be suitably protected in any area where impact damage might occur. This may be by installing bump rails or fixing suitable approved materials to the panel.

- Where internal wall or ceiling surfaces are painted, the paint should be non-toxic, impervious to moisture, withstand reasonable degree of impact and hosing with detergents and 82^0 C water.

- Walls and curbs should be coved to the floor with a radius of at least 75 mm. while wall-to-wall junctions should be coved to at least 25 mm.

1.5.3 Ceilings:

- It is recommended that ceilings be provided in all rooms of slaughter floors and processing buildings.

- Ceilings should be constructed from approved materials smoothly finished, impervious to moisture and prevent condensation. Joints and fixing devices should be effectively sealed.

1.5.4 Passageways, doors and jambs:

- They should be constructed from, or sheathed with rust resistant materials.

- Where sheathing is used, joints should be effectively sealed by continuous welding to prevent entry of moisture. Fixing devices such as pop rivets or screws should be effectively sealed to prevent crevices which are difficult to clean.

- Doorways through which product is transferred by rail or truck should be at least 1.5 m wide.

1.5.5 Columns, stairways and windows:

- Columns should be sheathed with approved material and so located where meat contact might not occur.

- Stairways should be constructed of material impervious to moisture, and have solid treads, closed risers and solid curbs. Side curbing should have a minimum height of 150 mm.

- Windowsills should be not less than 1.8 m from floor level. Internal sills should be sloped at an 45^0 angle.

2. Refrigeration facilities

2.1 Chillers, freezers and freezer stores should be located In an edible product section of the premises.

2.2 The construction and layout should satisfy the requirements of this chapter and comply with the provisions as detailed in 1.5.2

2.3 Sufficient space and rail length should be made available in chillers to allow carcass or sides to hang freely so that good air circulation is achieved which is able to reduce or maintain the temperature of the product to the desired degree.

2.4 Lighting intensity should be 220 lux.

3. Boned-out or Cut-up facilities - Design, Construction and Location

3.1 Consideration should be given to the operations and flow of materials associated with boning or cutting to ensure a smooth product flow, and facilitate inspection.

3.2 Boning, cutting and primary wrapping rooms should be separated from packaging room.

3.3 The boning room should be in an edible product section of the establishment and suitably separated from inedible departments.

3.4 Sufficient numbers of approved pedal or thigh operated basins or troughs, liquid soap dispensers and approved hand drying systems should be at personnel entrances to the boning room.

3.5 Basic construction requirements should be in accordance with 1.5.2.

3.6 Sufficient stainless steel deboning tables with approved receptacles for trimmings should be provided.

3.7 Equipment should be provided capable of maintaining the room at not more than 10^{0} C during boning and packing.

3.8 A recording thermometer should be provided to indicate room temperature.

3.9 Lighting intensity should be 400 lux.

3.10 A sufficient number of hot and cold hose points should be provided to service the area. Hose racks should be made of rust resistant materials. Hoses should be adequate in number and hung vertically. Lengthy unwieldy hoses is a nuisance and should be avoided.

3.11 Handwash basins, liquid soap dispensers, and sterilizers should be strategically located.

4. Inspection facilities

4.1 A table large enough to hold four (4) cartons should be provided.

4.2 Approved lighting facilities with intensity of 600 lux should be provided at all times.

4.3 There should be ready access to a hand wash and sterilizer unit.

5. Effluent and Waste Disposal

5.1 Abattoirs and establishments should have an efficient effluent and waste disposal system which should at all times be maintained in good order and repair. All effluent lines (including sewer systems) must be large enough to carry peak loads. All lines must be water-tight and have adequate traps and vents. Catch-basins, traps, save-all and sumps should at all times be kept separate and apart from any department in which meat is prepared, handled, packed or stored.

Disposal of waste should be effected in such a manner as to avoid contamination of potable water supplies.

5.2 Three entirely separate drainage systems should be provided as follows:

- Sitary drainage
- Pocessing or Trade waste drainage
- Storm water drainage

6. Amenities

6.1 Facilities for meat inspection personnel and employees although identical they must be separated.

6.2 Should provide adequate changing room accommodation, drying rooms, lunch room, toilets with flushing water closets, showers and hand washing facilities which should have adequate lighting, ventilation and should not open directly to any work areas.

6.3 Hand washing facilities with hot and cold water, with taps of a non-hand operable type and suitable hygienic means of drying the hands should be provided adjacent to every toilet. Where paper towels are used, a sufficient number of dispensers with paper towels and receptacles for used towels should be provided adjacent to each washing facility.

6.4 Waste from these facilities should not join the plant effluent system.

7. Office accommodation

7.1 A well-located and lockable office having dimensions of at least 3 m x 3 m exclusively for the meat inspection staff.

8. Laboratory facilities

8.1 Laboratory facilities consisting of a separate room strategically located having a floor area measuring at least 5 m x 3 m must be provided on the slaughtering establishment.

PART III - SANITARY FACILITIES AND CONTROL

1. Facilities like dips, security guard posts and hose points at the entrances and exits of the abattoir should be provided. Ideally, a one-directional flow of live animals through an entrance nearest to the holding yard/lairage and exit of processed meat or product through another gate is preferable.

2. There should be adequate and well-equipped areas reserved for the use of the meat inspection services at lairages, slaughter lines, boning rooms and packaging rooms.

3. Receival and Lairage areas:

3.1 Suitably designed receival areas for incoming stock adjacent stock pens should be provided. The receival area should be paved with impervious material adequately drained and capable of being readily cleaned.

3.2 Unloading ramps designed to suit the means of transport / class of livestock must be provided to ensure that the animals are not put at risk of injury.

3.3 Appropriate facilities should be so arranged as to permit proper inspection of the animals before slaughter.

3.4 Lairages and yards should be suitably constructed and maintained, paved or slatted, well drained and furnished with an adequate piped water supply, and preferably with an overhead cooling sprinkler facilities.

3.5 Sufficient hose points with adequate water pressure should be available to enable the lairages, yards, races and unloading ramps to be cleaned. Drinking devices (water troughs) should be provided connected with adequate supply of potable water.

3.6 Lairages and yards should be of such a layout that cross traffic of animals of different species is avoided.

3.7 There should be a sufficient number of paved or slatted pens to hold an entire festive day's tally for each species of stock to be slaughtered. The following lairage space for each species of stock is recommended:

Cattle:	2.6 m^2 per head
Sheep/Goats:	0.47 m^2 per head
Pig:	1 m^2 per head

3.8 Holding pens, lairages, races and walkways should be roofed to protect the animals from inclement weather and heat stress.

3.9 Adequately sized and roofed suspect pens for each class of stock should be provided and should incorporate the following:

- An effective crush.

- Handwashing facilities consisting of a washbasin operated by a foot pedal or thigh, a soap dispenser, a paper towel dispenser and a used towel receptacle must be provided.

- A lockable facility for storing equipment used for ante-mortem inspection is to be provided.

- Suspect pens should be clearly signposted with the words 'Suspect Pens'

- Suspect pens must be separately drained via a perimeter drain channel to the manure settling pit and drainage not allowed to flow over other pens or alleyways.

4. Boot-washing facilities should be provided and suitably located to enable the washing of footwear of personnel leaving the pen area.

5. Where a manure-settling pit is installed, it should be away from the building where meat is handled and so constructed to facilitate frequent cleaning.

6 Toilet and hand washing facilities should be provided in the vicinity of the stock pens.

7. Suitably located facilities for the adequate cleaning and disinfecting of vehicles should be provided.

8. There should be adequate slaughter and dressing rooms to enable the work to be performed in a satisfactory manner.

9. Those operations which carry a risk of contamination of meat suitable for human consumption should be sufficiently separated from other operations to avoid the risk of contamination.

To achieve this there should be:

9.1 Complete physical separation between departments processing edible and inedible material.

9.2 A separate room for emptying and cleaning the digestive organs.

9.3 Separate facilities for the preparation of edible fats and if they are not removed daily from the premises, should have facilities for their storage.

9.4 Separate rooms for the storing of hides, horns and hooves, and inedible animal fat unless these are removed daily from the abattoir.

9.5 Reserved premises for the accommodation of sick or suspect animals, the slaughter of such animals, and lockable rooms for the storage of detained meat and the storage of seized meat designed so as to prevent the risk of contaminating other meat and the risk of substitution.

9.6 Rooms, equipment and utensils provided for slaughtering and dressing should be used for this purpose only and not for boning-out, cutting-up, holding or other handling of meat.

9.7 Abattoirs should be designed and equipped so as to ensure that meat does not come into contact with floors, walls or other fixed structures.

10. Slaughtering floors should be fitted with equipment enabling animals to be bled and carcass to be dressed in a hanging position; if, however, metal cradles are used for flaying, they should comply with the provisions of this Part (no. 23) and should be high enough to ensure that the meat does not touch the floor.

11. Abattoirs and establishments should be equipped with an overhead rail for dressing the carcass and transporting them through the various stations. The slaughtering systems may be either *on-rail gravity, on-rail moving* or *a combination of the above.*

12. Abattoirs having a throughput rate of greater than 40 carcasses an hour should resort to a moving carcass conveyor type synchronized with a moving viscera conveying system.

13. The dressing rails should be high enough so that the lowest part of any carcass is at least 300 mm above the floor. They should be located, and the passage way space provided, so that the exposed product does not come in contact with posts, columns, lift cages, walls, and other fixed parts of the building, or other containers trafficked through holding and operating areas. Exposed products shall not be placed or stored beneath carcass in chillers or holding areas.

14. Moving chain systems should provide for a minimum carcass spacing of 1.5 m before evisceration and 2.4 m at, and after evisceration.

15. Minimum spacing of carcass sides after splitting should be 1.2 m.

16. Hand wash and sterilizer facilities should be provided at slaughter area, dehiding station, brisket splitting, evisceration, carcass splitting, inspection, deboning, preparation, packing or other handling of meat, conveniently located for the use of personnel during operations. These facilities are for use exclusively in the cleaning and disinfection of knives, steels, cleavers, saws and other implements. The water used for the washing of hands should be warm. Taps of handwash facilities should be of a non-hand operable type. An adequate supply of odourless liquid soap or other cleansing agents should be supplied.

17. An ample supply of potable water under adequate pressure should be provided with adequate facilities for its storage, of distribution and with adequate protection against contamination and pollution.

17.1 All water used in abattoirs and establishments should be potable.

17.2 Non-potable water may be used for such purposes as producing steam, refrigeration and fire control. Such water should be carried in completely separate lines, identified preferably by colour, and with no cross connection or back-siphonage with the lines carrying potable water.

17.3 An adequate supply of hot potable water at no less than 82 ^{o}C should be available at all times during working hours.

18. Adequate natural or artificial lighting should be provided throughout the abattoir or establishment. The intensity should not be less than:

600 lux at all inspection points;

220 lux in work rooms;

110 lux in other areas.

18.1 Light bulbs and fixtures suspended over meat in any step of preparation should be of the safety type or otherwise protected to prevent contamination of meat in case of breakage. Shatterproof protective shields should be provided over exposed lights.

18.2 Artificial lighting must not distort colours or cause shadows at the inspection surface.

19. Adequate ventilation should be provided to prevent excessive heat, steam and condensation and ensure that the air of premises is not contaminated with odours, dust, vapour or smoke. Ventilation openings should be screened. Windows should be fitted with whole panes and those which open should be screened. The screens should be made so as to be easily movable for cleaning. Internal windowsills, if present, should be sloped to prevent use as shelves.

20. All doors should be sufficiently wide and those opening from departments where edible material is handled, unless provided with an effective and operating air screen, should be solid, as far as possible self-closing, or snug- fitting double action doors.

21. All stairs located in any room or used in any department where edible material is handled should be so constructed that:

- They can be easily cleaned and no contamination can be caused by material passing through the risers or tread;

- They should have side curbs that are at least 10 cm in height measured at the leading edge of the treads.

22. Lift cages should be so constructed as to afford adequate protection of the meat against contamination. In particular the base and the sides should be finished to a smooth impervious surface. Lift shafts should be smoothly finished. The floor or lift shafts should be drained so as to permit effective cleaning.

23. Platforms, ladders, chutes, cradles and similar equipment in any room used for the preparation of meat should be constructed so as to be capable of effectively cleaned and should consist of material which is resistant to fracture, abrasion or corrosion. Where chutes are provided they should be constructed with inspection and cleaning hatches.

PART IV - EQUIPMENT AND UTENSILS

1. All equipment, implements and utensils used in abattoirs or establishments which come in contact with meat should present a smooth impervious surface, be resistant to corrosion, made of a material which is non-toxic, does not transmit odour or taste, free from pits, crevices, non-absorbent and capable of withstanding repeated exposure to normal cleaning and disinfection. Stationary equipment should be installed in such a manner so as to permit easy access for thorough cleaning and disinfection. Such equipment should be so constructed that it may be easily cleaned.

2. Equipment and utensils used for inedible or condemned materials should be so identified and should not used for edible products.

3. Equipment and utensils for slaughtering and dressing should be used for this purpose only and not for cutting-up or boning-out or further preparation of meat.

4. No containers, wooden crates / boxes / or cartons, should be assembled or stored in parts of an abattoir or establishment where animals are slaughtered or dressed, or meat is cut up or boned, prepared, handled, packed or stored.

5. All surface of tables, benches or shelves that are liable to come into direct with meat should have an impervious, smooth surface that is free from imperfections. Tables on which edible product is handled, suitable splash backs should be provided; and tables having water on their working surfaces should be provided with turned up edges and self-draining.

6. Tanks, fertilizer driers, and other equipment used in the preparation of inedible products shall be properly equipped with condensers and other appliances that satisfactorily suppress odours incident to such preparation, and prevent them from entering the edible section of the establishment.

7. Head wash cabinet measuring (1.8m x 900mm x 900mm) with a hook positioned about 1.5m above the floor should be provided.

8. Where individual offal washing equipment is installed, an overhead spray system with sufficient pressure should be provided.

9. Hand wash basins on slaughter floors and processing rooms should have splash guards, liquid soap dispensers, knife sterilizers, thigh or pedal operated unit and receptacles for disposable paper towels or alternatively an automatic hot air hand drying unit.

a) Acceptable materials

i) Product contacting equipment should be constructed from approved material.

ii) Where galvanized steel is used for certain applications, it should be 'smooth finished' commercial dip.

iii) Where plastics and resinous materials are used, it must be resistant to abrasion and heat, shatter-proof and non-toxic, and in addition, the material must not contain a constituent that will migrate to meat or other products in contact with it.

b) Unacceptable materials

i) Copper, aluminum, cadmium and lead are not acceptable for equipment which contacts edible product with the exception of copper water pipes. Aluminum may be used in the construction of work stands where there is only intermittent product contact.

ii) Painted surfaces are not acceptable on any equipment area that may contact edible product.

iii) Enamel and porcelain are not acceptable where there is any possibility of product contact.

c) Design and construction

i) Interior areas in product contact zone must be coved (minimum radius of 6 mm).

ii) Welding areas should be continuous, smooth and flush with adjacent surfaces. All parts of the product contact area should be free of recesses, open seams, gaps, crevices, protruding ledges, inside threads, bolts, rivets and dead ends.

iii) Gasket and packing materials should be non-porous, non-absorbent and unaffected by food products and cleaning agents.

iv) Equipment requiring lubrication should be designed so that product is not contaminated by lubricant.

d) Installation

i) Permanently installed equipment should be mounted at least 300 mm above the floor or from any wall.

ii) Electrical control cabinets should be mounted at least 100 mm clear of the wall and exposed conduits should be mounted at least 25 mm clear of walls, columns or ceilings.

iii) The cladding of pipes in edible product areas should be suitably protected to prevent contamination of edible product.

iv) Light fittings must have shatterproof shields or covers and preclude dust and dirt accumulation. Suspended light fittings must have a 45^{0} sloping cap and suspension apparatus must not allow accumulation of dirt.

v) Work platforms and stands should be located so that the carcass does not come in contact with the platform during the dressing or other operations; and should be so constructed that it should not allow accumulation of water during operations.

vi) High platforms with rise and fall motion at dressing and inspection stations should be smooth and steady, fitted with safety rails and should be mounted with adequate clearance from adjacent fixed objects.

e) Ultraviolet lights

i) Ultraviolet lights which do not produce ozone may be used in any area, provided the lights are shielded to prevent personnel from being exposed to direct or reflective ultraviolet rays.

f) Ozone

i) The use of ozone producing equipment should be restricted to ageing chillers.

ii) Where ozone-producing equipment is operating, the ozone concentration in

the air should not exceed 0.1 ppm

g) Compressed air

i) Where compressed air is in any equipment that allows the air to come in direct contact with edible product, possible contamination from moisture and oil from the compressor must be prevented by providing an effective drain in the compressed air storage tank and an effective filter to the outlet in the air discharge-line.

ii) All filters should be capable of frequent cleaning.

iii) Air exhaust ducts should be directed away from the edible product or preferably discharged to the outside atmosphere.

PART V - HYGIENIC OPERATING REQUIREMENTS

SECTION I - HYGIENIC OPERATIONG REQUIREMENTS

1. The yards and pens in an establishment shall be kept clean and shall be disinfected weekly and at any other times as determined by the Veterinary Authority.

2. Yards or pens on the premises of an establishment shall not be used for any purpose other than for the holding of animals prior to slaughter.

3. No animal other than animals for slaughter should be allowed to enter the holding yard of the abattoir. No live animals shall be allowed in any processing area.

4. All rooms (floors, walls, doors and soiled areas of ceilings) in processing areas, together with equipment used in preparing both the edible and inedible product shall be scraped, scrubbed and cleaned daily at the end of the day's operations

5. All equipment, implements, tables, utensils including knives, cleavers, knife scabbards, saws and containers should be cleaned at frequent intervals during the day, and immediately and thoroughly cleaned and disinfected whenever they come in contact with diseased material, infective material or become contaminated. They shall be cleaned and disinfected at the conclusion of each working day.

6. No meat product, or ingredient used in the preparation of a meat product, shall be exposed to contamination or deterioration.

7. Where any trolley or any container used in a department where edible material enters an area where inedible material is handled, it should be cleaned and disinfected immediately before re-entering any edible department.

8. Detergents, sanitizing agents and disinfectants should conform to public health requirements and should not be allowed to come into contact with meat. Any residue of these cleaning agents used for the washing of the floors, walls or edible product equipment should be removed by thorough rinsing with potable water before the area or equipment is again used for handling meat.

9. Except as required for purposes of hygiene no substance, which may contaminate meat should be handled or stored in any part of the abattoir or establishment in which animals are slaughtered or carcass dressed or in which meat is prepared, handled, packed or stored. However, materials employed in the maintenance of the abattoir or establishment may be used at any time when an inspector is satisfied that there would be no danger of contamination of meat.

10. Rooms and areas in which cleaning / spray equipment used for hooks / gambrels / shackles or other gears in which strong acid or other cleaning materials are used should be effectively separated from and have no air connection with processing department.

11. Pest Control

Preventing access to the edible product processing and packaging rooms from birds, insects, rodents and other vermin is essential; and as such, the following measures should be instituted:

(a) An effective and continuous programme for the control of insects, birds, rodents or other vermin within the abattoir or establishment should be maintained.

(b) battoirs or establishments and surrounding areas should be regularly examined for evidence of infestation with insects, birds, rodents or other vermin.

(c) Should pests gain entrance to the premises, approved eradication measures should be instituted. The eradication of pests should always be carried out under skilled supervision and with the full knowledge of the inspector.

(d) Only pesticides approved for use in an abattoir or establishment by the competent authority should be used in an abattoir or establishment and the greatest care should be exercised to prevent any contamination of the meat. Pesticides should only be employed if other precautionary methods cannot be used effectively.

(e) If spray method is used, all meat should be removed from the room and all equipment and utensils covered.. After spraying, the equipment and utensils should be thoroughly washed prior to being used again.

(f) Pesticides or other toxic substances should be stored in separate locked rooms or locked cabinets and dispensed or handled only by authorized and properly trained personnel. Every precaution should be taken to avoid contaminating the meat.

12. Amenities provided for the use of employees and the meat inspection service including the meat inspection office space should be kept clean at all times.

13. When in the opinion of an inspector, any equipment, utensil, room or compartment at a registered establishment is unclean or its use would be in non-compliance with this manual, he shall detain the article and suitably identify it with a serially numbered tag or some other method acceptable to the Authority. No equipment, utensil, room or compartment so detained shall again be used until made acceptable; no identification mark placed on the article shall be removed by anyone other than the officer

14. The outside surrounds of premises shall be maintained in a clean and tidy condition. Worn-out equipment / building materials, wooden crates / carton boxes, grounded vehicles, litter etc. shall be removed from the establishment.

SECTION II - HYGIENE AND HEALTH OF PERSONNEL

1. Managers of abattoirs and establishment should arrange for adequate and continuing training of every employee in hygienic handling of meat and clean habits so that the employees are able to take the necessary precautions to prevent contamination of meat.

2. Medical examination should be carried out prior to employment of employees and should be repeated yearly or when clinically or epidemiologically indicated. The medical examination should pay particular attention to:

i) infected wounds and sores

ii) enteric infections including parasitic diseases and carrier states especially with respect to Salmonellae ; and

iii) respiratory diseases.

3. The management should take care to ensure that no employee, while known or suspected to be suffering from or to be a carrier of a disease capable of being transmitted through meat, or while afflicted with infected wounds or sores or diarrhoea, is permitted to work in any area of an abattoir or

establishment in a capacity in which there is a possibility of such a person directly or indirectly contaminating meat with pathogenic micro-organisms. Any ill person should immediately report to management that he is ill.

4. Any person who is cut or injured should discontinue working with meat and until he is suitably bandaged and should not engage in any abattoir or establishment in the preparation, handling, packaging or transportation of meat. No person working in any abattoir or establishment should wear any exposed bandage unless the bandage is completely protected by a waterproof covering, is conspicuous in colour and is of such a nature that it cannot become accidentally detached.

5. The manager of any abattoir should maintain health records of employees for future monitoring by inspectors.

6. Every person engaged in an abattoir or establishment should wash his hands frequently and thoroughly with soap and detergents under running warm potable water while on duty. Hands should be washed before commencing work, immediately after using lavatory, after handling contaminated material, and whenever else necessary. Notices requiring handwashing should be displayed.

7. Every person engaged in abattoir work should maintain a high degree of personal cleanliness while on duty, and should be appropriately attired including (a) head covering and (b) footwear, all of which articles should be washable unless designed to be disposable and which should be maintained in a clean condition consistent with the nature of the work.

8. Every person who visits an area in an abattoir or establishment where carcass or meat are handled should wear clean protective clothing. Visitors should always be taken from the opposite end of the product flow (clean to dirty area). Visitors' changing room should be suitably located.

9. Entrances and exits to and from workstations should be such, that where possible, persons should not cross through carcass lines or other workstations. Due consideration should be given to clear, physical separation between 'clean and dirty' areas.

10. No part of an abattoir or establishment used for slaughter of animals, dressing of carcass, preparation, handling, packaging or storing of meat should be used for deposit of personal effects or clothing.

11. Protective clothing, knife scabbards, plastic aprons and other working implements should be deposited in a place provided for the purpose where they will not contaminate any carcass or meat.

12. Any behaviour which can potentially contaminate the meat, such as eating, use of tobacco, chewing, should be prohibited in any part of the abattoir or establishment used for slaughtering or dressing of carcass or for the preparation, handling, packaging or transportation of meat.

13. Gloves if used in the handling of meat should be maintained in a sound, clean and sanitary condition. The wearing of gloves does not exempt the operator from having thoroughly washed hands. Gloves should be of an impermeable material except where usage would be inappropriate with the work involved.

14. The Manager should have ‘an on-going training programme among personnel / operators mainly to increase the awareness of the need for good hygiene practices

SECTION III. PRINCIPLES TO BE OBSERVED DURING SLAUGHTERING AND PREPARATION OF MEAT

1. Every slaughter animal must undergo ante- and postmortem inspection.

2. No animal should be slaughtered or dressed in any abattoir or establishment except when an inspector is present. An exception may be given just to slaughter only if they are found to be in pain or emergency or fractured condition.

3. Any animal in an unreasonably dirty condition should be cleaned to the satisfaction of the inspector before it is allowed to enter the killing floor, so as to lessen the risk of contamination.

4. All animals brought to the slaughter floor should be slaughtered without delay.

5. The bleeding should be as complete as possible. If blood is intended to be used in preparation, it should be collected and handled hygienically and should in no case be stirred with the hand but only with hygienically acceptable implements.

6. Stunning, slaughtering / sticking and bleeding of any animals should not not be allowed to proceed at a rate faster than that at which the carcass can be promptly accepted for dressing.

7. The slaughtering, sticking, bleeding and dressing should be carried out with care so as to ensure the production of a clean carcass, head and edible offal. None of the parts should come in contact with the floor and all contamination should be avoided.

8. Carcass should be separated from each other to avoid contact and contamination once the removal of the hide, skin or pelt has commenced. Separation of carcass, heads and viscera should be maintained until they have been examined and passed by the inspector. Carcass should come in contact only with surfaces or equipment essential to handling, dressing and inspection.

9. Before the removal from any head of any meat or brain intended for human consumption, the head should, except in the case of pigs, be skinned, washed / flushed and rendered clean with running potable water to the satisfaction of inspector.

10. When the tongue is dropped, caution should be exercised not to cut the tonsils.

11. The following points should be observed in the skinning operations;

(a) All species, except pigs, should be skinned and this should be done before the carcass is eviscerated in such a manner as to avoid contamination of the carcass. An exception is also allowed especially when skin-on goats are preferred by the consumer. To achieve this, appropriate facilities similar to pigs should be made available. Pumping of air between the skin and carcass to facilitate skinning should be forbidden. Pigs should be scoured of all bristles, scurf and dirt. The water in the scalding tanks should be changed as frequently as possible.

(b) Skinned carcass should not be washed in a manner which will allow water to enter either the abdominal or thoracic cavities prior to evisceration.

(c) Lactating or obviously diseased udders should be removed from all classes of animals. Removal of such udders should take place at the earliest appropriate time during dressing. No secretion should be allowed to contaminate the carcass and therefore udders should be removed in such a manner that the teat and udder substance remains intact and without any milk duct or sinus being opened.

12. Evisceration should be effected without delay.

13. During dressing the following should be observed:

(a) The discharge of any material from the oesophagus, paunch, intestines or rectum, or from the gall bladder, urinary bladder, uterus or udder should be effectively prevented.

(b) Any offal intended for human consumption should be removed from the carcass in a manner that will prevent contamination of the organ removed.

(c) Intestines should not be severed from the stomach during evisceration and no other opening should be made during evisceration into any intestine/paunch. In the case of sheep, lambs/goats and pigs, the removal of stomach and intestines should be carried out without separation.

(d) Spermatic cords and pizzles should be removed from the carcass.

14. No carcass, meat or edible offal should be washed in any abattoir other than with running potable water.

15. No paper, cloth, wad, sponge or brush should be used in the washing of any carcass.

16. No person should, whether mechanical or any other means, inflate with air any carcass, meat or edible offal unless ritual procedures require them.

17. No hides, skin or pelts should be washed or defleshed or left in any part of the abattoir or establishment used for slaughtering or dressing of animals or the preparation or holding or any meat intended for human consumption.

18. All stomachs, intestines and all inedible materials derived from the dressing of carcass should be removed as soon as possible but in accordance with the inspection procedure from the dressing room in such a manner as to avoid contaminating the floor and walls or any carcass, meat or edible offal.

19. All stomachs, intestines and all inedible materials should subsequently be treated in parts of the abattoir or establishment destined for this purpose in accordance with the recognized practices which should pay attention to cleanliness and hygiene.

20. Faecal and other objectionable matter contaminating carcass during dressing should be carefully trimmed off.

21. Where the inspector considers that the manner in which animals are being slaughtered or dressed or under which the carcass or meat are being handled, prepared or packaged, will adversely affect:

    (a) the cleanliness of the carcass or meat ; or

    (b) the hygiene of production ; or

    (c) the process flow of activity ; or

    (d) the efficiency of meat production,

    he may require the manager to take action to correct the deficiency or reduce the rate of production or to suspend operations for the time being in any specified section of the abattoir or establishment.

22. Post mortem inspection:

    (a) Post mortem inspection should be performed immediately after slaughter process.

(b) Prior to the final examination, all parts required for inspection of the slaughtered animal should remain identifiable with the carcass and no part must be removed without the consent of the inspector.

23. Only healthy carcass or parts, cleaned to the satisfaction of the inspector supervising slaughtering operation shall be accepted as suitable for human consumption.

24. In order to maintain high standards of hygiene slaughter and dressing the managers and inspectors should be trained in quality management system. In the latter system they are required to write their specifications that are quantitative and achievable. Having written the specifications they should be able to systematically analyse and design a process capable of producing a carcass / product that meets their specifications and achieve it in a cost effective and efficient manner. The most appropriate tool is to use the HACCP (Hazard Analysis Critical Control Point) concept and develop a quality manual structured specifically for the establishment in question.

PART VI - BRANDING OF MEAT PASSED FOR HUMAN CONSUMPTION

Meat that has been passed by the inspector as fit for human consumption should be branded accordingly as prescribed by the controlling authority.

1. The stamp roller must be made of material that is easily cleaned, dismantable and sterilized.

2. Brands and stamps should bear the logo and the words 'Vet. Inspected' and must be kept clean while in use. They should be held in the custody of the inspector and used only under his supervision.

3. Suitable (colour) branding dye should be applied to the meat to give a contrast against the latter surface. The ink to be used for branding any meat or offal passed as fit for human consumption should be one that is approved by the controlling authority. The ink used should be satisfactorily adhesive, non-running and should not present any health hazards to man.

4. The preparation of the stamping dye should be done hygienically and in a sterile manner. The prepared dye should be kept in sterile containers and capable of being dispensed into smaller stainless steel trays ready-for-use.

PART VII - OPERATING PRACTICES FOLLOWING POST-MORTEM INSPECTION INCLUDING STORAGE AND CUTTING UP

SECTION I - STORAGE OF MEAT AND EDIBLE OFFAL

1. Meat passed as fit for human consumption should be removed without undue delay from the dressing area. They should be handled, stored or transported in a manner that will protect the meat from contamination and deterioration.

2. All meat and edible offals should be stored at 3^{o} C and should at all times be protected from contamination.

The following provisions should apply to all meat or edible offals placed in any chilling room or freezing rooms:

(i) Entry should be restricted to personnel necessary to carry out operation efficiently.

(ii) Doors should not be left open for extended periods and should be closed immediately after use.

(iii) No chilling room, freezing room or freezer store should be loaded beyond its designed capacity.

(iv) Where refrigerating equipment is not manned, automatic temperature recorders should be installed.

(v) If no automatic device is installed temperatures should be read at regular intervals and the readings recorded in a log book.

(vi) A record should be maintained of all meat placed in or taken out of the chilling room, freezing room or freezer store.

(vii) There should be a reliable method of monitoring the chilling of carcass or edible offals which are placed in the chiller.

(viii) Condensation should be prevented by the efficient refrigeration facilities combined with proper insulation of walls and ceilings. It is important that the temperature, degree of relative humidity and the velocity of air flow be suitably controlled and maintained. If overhead refrigerating coils are installed, insulated drip pans should be placed beneath them. All floor type refrigerating units should be placed within curbed and separately drained areas unless located to floor drains.

(ix) The refrigeration capacity should be sufficient to enable the temperature in the centre of the thickest point of all carcass and sides to be reduced from the time they were first placed in the chiller to a meat temperature of not more than 7^{o} C within 12 hours.

(x) Where shelves or racks are provided, they should be made of rust resistant material. Meat that is not in cartons should be hung or placed on suitable corrosion-resistant trays in a manner permitting adequate circulation of air around the meat. Cartons should be stacked to permit adequate circulation of air around each carton.

(xi) Meat that is not in cartons should be held in a manner (trays) which precludes drip from one piece of meat falling on to any other piece. Care should be taken to avoid contact between the base of any tray and meat stored beneath. The bottom of any shelf should be 300 mm above the floor.

(xii) Refrigerating coils should be defrosted frequently to prevent excessive accumulation of ice and loss of refrigerating efficiency. Provision should be made for removal, without affecting the product, of water resulting from defrosting.

SECTION II - BONING OR CUTTING OF CARCASS

1. The permitted methods of further preparation to bone-in or boneless meat are:

   (a) conventional boning or cutting

   (b) hot boning or cutting

   (c) thaw boning or cutting

2. The types of boning systems may be:

   - on-rail boning
   - side boning
   - quarter boning
   - table boning
   - belt conveyor boning

3. A separate pre-trim area maintained at not more than 12^{o} C should be provided between chillers and commencement of boning or cutting.

4. Access to handwash and sterilizer units should be provided.

5. Where necessary, stands for high and low trim should be provided and large enough to allow inspection staff to monitor trimmings.

6. Where rails are used the rail at the pre-trim area for side boning should be high enough that the neck area is clearly visible for inspection.

7. All rooms or processing area for the cutting up or boning of carcass should wherever possible comply with the following provisions:

   (i) The rooms should be temperature controlled at 10 - 12 ^{o} C.

(ii) Defrost discharge drainage from refrigeration equipment should be confined and directed to the drainage system in accordance with Part VII (12).

(iii) Entry to the room should be restricted to personnel necessary to carry out operations efficiently.

(iv) Doors should not be left open for extended periods and should be closed immediately after use.

(v) Every practical precaution, including vermin proofing of the room should be taken to maintain the room free of flies, cockroaches, rats, mice and other vermins. Other procedures, where applicable, as detailed in Part V, Section I (11) of this chapter should be followed.

(vi) The construction of the rooms or processing area should wherever applicable comply with the provisions as detailed in PART II of this Chapter.

8. The equipment and utensils used in the rooms or processing area should wherever applicable comply with the provisions as detailed in PART IV of this Chapter.

(i) A sufficient number of portable watertight receptacles for the storage of bones, trimmings, fat and other waste matter, which should be of metal or of any other suitable, impervious non-absorbent material and should have impervious fly covers should be provided in every processing area or room where the deboning or processing is being conducted.

(ii) The bones, fat, trimmings, or waste matter may however be taken from the processing area or to a separate room, enclosure or outside area and immediately placed in clean, separate stainless steel containers, pending removal from the premises.

(iii) The receptacles immediately after emptying shall be effectively cleaned and inverted to dry. They should at all times when not being used for the immediate reception of bones, or waste matter should be kept covered and stored in a separate room or enclosure.

9. The daily maintenance of the rooms or processing area shall comply wherever applicable, with the provisions as detailed in PART V, Section I (Hygienic Operating Requirements) of this Chapter.

10. The hygiene and health or personnel working in the room or processing area shall comply, wherever applicable with the provisions as detailed in PART V, Section II (Hygiene and Health of Personnel) of this Chapter.

11. A carton and wrapping material store should be provided. They should be dust and vermin proof and should not have air connection with rooms used for the storage of cleaning compounds.

12. Facilities for holding packing materials for immediate use during production in the boning room should be provided.

13. A separate room with facilities should be provided for washing gear and equipment.

14. A facility outside the processing room should be provided for sharpening knives and storing aprons and gear.

15. Hot and cold water hose points should be provided.

PART VIII - PACKAGING AND PACKING MATERIAL

If the meat is packaged or wrapped, the following considerations should be taken into account:

1. Packaging material should be stored and used in a clean sanitary manner.

2. Wrapping material should be sufficient for the purpose of protecting the meat from contamination in the conditions under which it is to be handled, transported or stored.

3. The wrapping material should be non-toxic and should not leave harmful deposits of any kind on the meat, or otherwise contaminate it.

4. The wrapping or covering of warm or cold meat transported within an establishment or from one establishment to another should be optional, but care should be taken that the meat is not contaminated.

5. Cases or cartons used for the packing of meat should be provided with a suitable inner liner. However, the liner may not be required if individual pieces of meat, such as cuts or boneless meat, are individually wrapped before packing.

PART IX - TRANSPORTATION OF MEAT AND EDIBLE OFFAL

1. Meat should not be carried in any means of transport that is used for conveying live animals.

2. Meat should not be carried in the same means of transport as other goods in a way that may adversely affect the meat.

3. Stomachs should only be transported when thoroughly cleaned or scalded, and heads and trotters only when skinned or scalded or dehaired.

4. Meat should not be placed in any means of transport which has not been cleaned before loading and if necessary also disinfected.

5. Carcass, sides and quarter, other than those that are adequately wrapped and frozen, should be hung during transport or placed in a suitable manner on racks or similar equipment.

6. Basic design and construction of ***Meat Delivery Vehicle*** should comply with the following conditions:

(a) The meat compartment should be completely separated from the driving cabin and should have an adequate capacity for the consignment intended.

(b) The compartment where the meat is being conveyed should be kept covered and enclosed so as to protect the meat and edible offal from dust, flies, and all other sources of contamination.

(c) All internal finishes should be made of corrosion-resistant material, be smooth, impervious and easy to clean and disinfect. Joints, rivets and doors should be effectively sealed so as to prevent the entry of pests and other sources of contamination. Floor to wall junction should be coved to a radius of 50 mm.

(d) The meat compartment should be well insulated with approved material approximately 40-50 mm thick and temperature sensor should be located in a convenient position whereby the temperature of the meat compartment is easily read.

7. Vehicles intended for the transport of meat should be equipped in such a manner that the meat does not come into contact with the floor. Height of railings should be such when quartered carcasses are hung; the lowest portion of the latter has the clearance of not less than 75 mm above the floor.

8. Suitable racks and closed containers should be used for the transport of unwrapped edible offal. Offal should be transported under refrigeration unless the period of transport is less than two hours when an insulated container may be used.

9. Where vehicle is provided with a ramp, step or tailboard, such device should not be placed or carried within such compartment.

10. The floor of the conveyance should not be walked on during loading or unloading except by persons wearing suitable protective clothing and covering over their footwear.

B. MINIMUM STANDARDS OF PLANS AND SPECIFICATIONS FOR CONSTRUCTION OF SLAUGHTERHOUSE - POULTRY

1. SITE SELECTIONS AND APPROVAL

1.1 Introduction

The location and site characteristics should be such as to minimize the impact of the developments of the local community and avoid conflicts with the natural environment and planned use in the area.

1.2 General Conditions

1.2.1 The buildings on the premises should be located so that they are separated from any human habitation by reasonable distance, from any building, from any public road or from any public place on which may be located any matter or thing or on which may be carried out any operations which are likely to cause the poultry meat on the premises to become contaminated or unfit for human consumption.

1.2.2 General sanitation provisions require that processing operations be conducted in buildings that are well ventilated and lit, kept clean and free from vermin, dust and other conditions that would contaminate poultry products.

1.2.3 To protect the premises from unnecessary exposure to contamination, live poultry other that poultry intended for immediate slaughter and those kept under intensive type cage conditions should not be housed within 75 metres of the processing premises.

1.2.4 The exterior of the premises should be kept in good repair.

1.2.5 The area should be free of dust and of odours, smoke, as and other such things as are sometimes produced by such industries as sawmills, oil refineries, city dumps and sewerage disposal systems.

1.2.6 All site areas not sealed should be maintained in a clean and tidy condition. Stored material on the site should be kept in an orderly manner 300mn above the ground in a well-drained position or on pallets.

1.2.7 Necessary water, electricity and drainage facilities, including disposal of works effluent, stormwarter and site drainage and sewerage disposal should be available at the site.

1.2.8 The access roadways and the immediate surroundings of the building should be sealed and other areas treated so that a low dust level is present. Holding areas for live birds, vehicle loading and unloading areas, vehicle cleaning areas and inedible material collection areas must be paved and drained.

1.2.9 The site should lend itself to the construction of an adequate system of drainage, having regard to the operations intended to be carried out on the premises.

1.2.10 Site subject to flooding should be avoided.

1.2.11 The area of land required should be determined before selecting the site. Space should be sufficient for such things as bird holding pens, separate roadways, parking areas, effluent ponds and other ancillary functions.

1.3 Expansion

In planning the premises, careful consideration should be given to the plans to allow space for future expansion.

1.4 Soil Types

In selecting the site, care should be taken to avoid undesirable soil types. Soil types subject to large expansion and contraction can adversely affect construction costs or can cause serous damage to buildings. Heavy soils subject to water logging can create drainage problems and allow pools of stagnant water to form.

1.5 Sitting of Ancillary Facilities

In the sitting of inedible product departments, effluent treatment systems and steam generating plants in relation to edible product processing facilities, the prevailing winds and terrain should be taken into account.

1.6 Water

1.6.1 An adequate supply of potable water must be available.

1.6.2 Depending on the source of supply, it may be necessary to install an in-plant chlorination system or other treatment systems to ensure portability of water at all times.

1.7 Electricity

The electricity supply should be adequate to meet the anticipated peak demand.

1.8 Drainage System

The site plan should indicate the proposed method of disposal of works effluent and sewerage. Storm water and site drainage should also be indicated.

1.9 Waste Disposal

The method of disposal of any liquids, gas and solid wastes from the establishment should be acceptable to the relevant authorities and not constitute and hazard to the overall hygiene of the premises.

2. SERVICES

2.1 Introduction

This chapter deals with services required for plant operations, which should be installed in accordance with appropriate standards and the regulations of all relevant authorities.

Important considerations are as follows:

- materials of construction should be suitable for the area in which they are to be installed;
- safety aspects of installations;
- adequate access for maintenance and sufficient room to work once access has been gained.
- At all time, product hygiene should not be put at risk.

2.2 Scope:

- steam
- potable water, both hot and cold
- non-potable water
- drainage
- electricity
- refrigeration
- pneumatics
- pipeline identification

2.3 Steam

The steam generating plant should be located so that exhaust gases fuel receival and storage facilities not create a nuisance or a hazard to product hygiene.

2.4 Water Supply

Sufficient water should be readily available for:

(a) Carrying out in a hygienic manner the operations to be carried out on the premises.

(b) The shower rooms, washbasins, drinking fountains and sanitary conveniences.

(c) Cleaning utensils, appliances and equipment.

(d) Cleaning and flushing the premises, including the settling pit, drains, holding and reception area and roadways.

(e) Equipment used for cleaning live bird crates.

(f) Cleaning vehicles used for the conveying of poultry meat from the premises.

(g) Cleaning vehicles used for conveying birds to the premises.

2.5 Potable Water

2.5.1 Potable water should, in addition to meeting the standards, be free of turbidity, colour and disagreeable taste or odour.

2.5.2 Where premises have in-plant chlorination facilities installed, storage facilities or other means should be provided to ensure a contact period of at least 20 minutes between chlorination and use within the premises.

2.5.3 In-Plant chlorinators, where installed, should be of an automatic, continuous type and fitted with alarms to indicate failure of the apparatus.

2.6 Potable Water Reticulation

2.6.1 A building on premises should be constructed so that each room except a room used for chilling accommodation, is provided with an ample supply of hot and cold water, and delivered to water connections.

2.6.2 The reticulation system should be designed and installed so that back siphonage of used or polluted water cannot occur.

2.6.3 Potable water supply outlets to immersion tanks should be located so that there is a disconnection between the outlet and the highest point of the water in the tanks.

2.6.4 Where it is necessary to use submerged outlets, an effective system, such as vacuum breakers acceptable are those, which can continuously be shown to be functional when the water supply is operating normally.

2.6.5 The reticulation system should be no unused ends that might mean water becomes stagnant.

2.6.6 In warm processing areas, overhead cold water lines should be insulated, if necessary, to prevent condensation forming.

2.6.7 The water should be provided at a pressure sufficient to permit effective cleaning of all rooms.

2.7 Private Wells and bores

If the water is obtained from a private underground source, the wells or bores should be under the control of the registered establishment and effectively protected from pollution.

2.8 In-Plant Storage Tanks for Potable Water

2.8.1 In plant storage tanks be provided with effective covers prevent the entry of insects and other extraneous matter.

2.8.2 The inlet, outlet and, if provided, the reticulation system should be installed to ensure that there are stagnant areas.

2.9 Hot Potable Water

2.9.1 An adequate supply of hot potable water should be provided. Water provided for purposes of sterilization should not less than 82 degrees Celsius at point of use, while that provided for hand washing should be delivered between 35 degrees Celsius and 45 degrees Celsius.

2.9.2 Where a ring main system is used in a processing room, a dial-faced thermometer should be on the supply return lines as the leaves the room. This thermometer should be located so that inspection staff can readily observe it.

2.9.3 Where hot potable water for sterilization is produced by steam injection at point of use, a thermometer should be on each item of sterilizing equipment.

2.10 Non- potable Water

2.10.1. Non-potable water should be restricted to the following uses:

- on ammonia condensers not connected with the potable water supply
- in vapour line serving inedible product rendering cookers.

2.10.2. Water derived from internal processing procedures should be used only in drains in the scalding and de-feathering section to assist the flow of feathers and effluent from the scald tank and de-feathering cabinets or other approved purposes. The point of discharge into the drain should be through a fixed metal outlet not capable of being fitted with a hose attachment, and the outlet positioned not more than 150mm from the bottom of the drain for direct discharge into the drain.

2.11 Drainage

Three entirely separate drainage system should be provided as follows:

- sanitary drainage
- processing or trade waste drainage
- stormwater drainage

All drainage systems must comply with local authority requirements.

2.12 Sanitary Drainage

2.12.1 Lines from toilets and urinals should be directed to an adequate septic tank system or to the local sewerage system.

2.12.2 Sanitary drainage lines from toilets and urinals should not be connected with other drainage lines within the establishment and shall not discharge into save-alls.

2.12.3 The drainage system should be designed to eliminate any possibility of drainage backing up and flooding the floors of any processing area.

2.12.4 Septic tanks, if used, should be away from processing areas so as to prevent any nuisance.

2.13 Processing or Trade Waste Drainage

2.13.1 The drainage system from processing areas should be designed to enable rapid removal of wash down or other water from the floors of departments.

The system should ensure the effective and expeditious removal of plant effluent from the premises.

2.13.2 Drainage waste outlets should be provided to adequately remove waste in processing areas.

2.13.3 Each drainage waste should be at least 100mm in diameter and be fitted with preformatted or grilled drain covers.

2.13.4 Drains should be equipped with effective, P, U or S shaped deep seal traps and be adequately vented to the outside atmosphere.

2.13.5 Floors should be evenly graded to the trapped drainage wastes.

2.13.6 Drainage for the removal of viscera, feathers etc. within the packing, dressing and killing areas should take the form of a box channel drain.

2.13.7 Box channels should be wide enough to enable cleaning and internal corners should be effectively coved.

2.13.8 Floor drainage valleys should be provided with approved covers where necessary over walkways and the direction of flow of the drains must be from clean areas to dirty areas.

2.13.9 Where viscera, feathers and other waste are removed from the processing premises to the save-all by means of a large diameter pipe, both ends of the pipe should be made rodent proof when not in use.

2.13.10 Pits and tanks into which blood is received must be located outside the bleeding area.

2.13.11 Blood pits and tanks should be constructed so that they are impervious to moisture and suitably drained. They should be provided with facilities to enable effective cleaning.

2.14 Primary Treatment Systems

2.14.1 A setting pit or other approved screen device should be at the termination of all waste water drains from the plant and should be located outside the building and be constructed of concrete or other approved material and should be emptied and cleaned daily.

2.14.2 Unless satisfactory mechanical means are provided for removal of waste materials on a continuing basis, the setting pit on one side should be provided with a concrete apron along the whole length of the side, which should not be less than 1.8m wide and surrounded by a 150mm wide curb on each other side.

2.14.3 Save-all or primary treatment systems should be provided to effectively handle drainage from the establishment.

2.14.4 Screening equipment for solids separation (gut, feather) should be located on a concrete pave, curbed and drained area provided with hot and cold wash down points.

2.14.5 The volume of a save-all should allow a residence time sufficient to ensure reasonable recovery of fats and sediments.

2.14.6 Each system should be in an area away from edible processing departments so as not to constitute a potential nuisance.

2.14.7 Each system should be surrounded by a concrete apron, curbed on three sides, with the open side being at least 1.8m wide and sloped towards the save-all or grease trap to facilitate drainage of liquid back into the pit.

2.14.8 The save-all should be constructed so that it can be readily emptied and cleaned.

2.14.9 Hot and cold-water hose points for wash down purpose should be in the vicinity of the save-all.

2.15 Storm water Drainage

Local authorities frequently will not allow storm water to be connected to the save-all or effluent treatment system. Storm water drainage connections to effluent treatment systems where local governments permit, should ensure that the design and installation are such that a fail-safe system prevents flooding.

2.16 Further Effluent Treatment

Any additional effluent treatment facilities should be located so as not to create an odour or other nuisance to processing areas.

2.17 Electrical Fittings

Electrical pipe fittings should be installed at least 25mm from equipment or walls. Other electrical fittings such as switches, ducts, cable ladders and switch boxes should be sealed to the wall or sufficiently clear to permit effective cleaning of the space between the fitting and the wall.

2.18 Refrigeration

2.18.1 Where condensation is likely to lead to product contamination, effective means to confine and remove the condensation should be provided.

2.18.2 Where overhead refrigeration facilities are installed, insulated drip pans, directly connected to the drainage system, should be placed beneath them.

2.18.3 Refrigeration motors should be located outside the premises except for other than a sealed unit, which is an integral part of an appliance.

2.18.4 Floor type refrigeration units should be placed within curbed and separately drained areas unless located adjacent to a floor drain.

2.19 Pneumatics

2.19.1 Where practicable, the exhaust from air operated equipment should be piped to the exterior of processing buildings.

2.19.2 Oil from air exhaust should be adequately trapped to prevent contamination of product.

3 BASIC CONSTRUCTION

3.1 Introduction

3.1.1 The items in this section are to ensure that the interiors of edible product areas of sanitary construction using acceptable non-toxic materials.

3.1.2 Light coloured finishes should be used to help maintain sanitary conditions.

3.2 Buildings

3.2.1 The buildings should be designed and constructed so that there is sufficient space to allow for processing, movement of personnel and effective cleaning.

3.2.2 The premises should be provided with:

(a) adequate holding facilities under cover for all live birds awaiting slaughter;

(b) a separate room for stunning, bleeding and removal of feather; the walls of this room should be not less than 3m from floor to ceiling or wall plate;

(c) a room, the height of which should not be less than 3m from floor to ceiling or wall plate, for eviscerating.

The separation of this room from that referred to in (b) shall be by full height walls except for necessary self-closing door and approved openings sufficient for passage of product.

(d) A room, the height of which should not be less than 3m from the floor to the ceiling or wall plate for washing and packing.

(e) A room or rooms adequate constructed and equipped for keeping under refrigeration all the dressed poultry that is likely to be on the premises at any time.

(f) A rent-free office space including necessary furnishings, light and janitor service for the exclusive use for official purpose of the inspector.

3.3 Internal Walls

3.3.1 Materials used should be as follows:

- impervious to moisture
- smoothly finished
- rust resistant
- resistant to or protected from impact
- not subject to chapping or flaking

3.3.2 Joints and fixing devices should be sealed to effectively prevent entry of moisture.

3.3.3 Where walls are not of full height, they should be capped with a 45 degree top.

3.3.4 Horizontal ledges occurring in wall construction should be slopped down at an angle of at least 45 degree.

3.3.5 Where internal panel type construction is to be incorporated other than in freezer stores or blast freezers, walls panels should be placed on a concrete plinth raised a minimum of 150mm above floor level.

3.3.6 Wall panel construction should be suitably protected in any area where impact damage might occur. This may be achieved by installing bump rails or affixing suitable materials to the panel.

3.4 Floors

3.4.1 Materials used should be concrete or other accepted substances impervious to liquids. Floors in areas where emulsions are prepared or further utilized should be acid resistant.

3.4.2 Where tiles are used they should be laid on a firm water-proof concrete foundation and the joints between the tiles should be grouted with acid resistant water-proof mortar and the joints should be narrow as possible.

3.4.3 The surface should be relatively smooth, easily cleaned, resistant to wear and corrosion and non-slip in finish.

3.4.4 Floors should be evenly graded to waste outlets so liquid does not accumulate.

3.4.5 Where anti slip surfaces are applied to floors, the surfacing materials should be of an acceptable type and its finish should be relatively smooth.

3.4.6 Floor joints should be sealed with materials impervious to liquids and finished flat with the surface.

3.5 Ceilings

3.5.1 Ceilings should be provided in all rooms of processing premises.

3.5.2 Ceilings should be constructed from acceptable materials, smoothly finished and impervious to moisture. Joints and fixing devices should be effectively sealed.

3.5.3 The minimum height of a ceiling, or the distance measured from the floor to wall plate, should be not less than 3m in all processing rooms.

3.6 Coving

3.6.1 Walls and curbs should be coved to the floor with a radius of at least 75mm.

3.6.2 Wall to wall junctions should be coved with a radius of at least 25mm.

3.7 Passageway, doors and jambs

3.7.1 Passageways, doors and doorjambs should be constructed from, or sheathed with, rust resistant materials.

3.7.2 Where sheeting is used, joints should be effectively sealed against moisture entry by continuous welding or other equally effective means.

3.7.3 Fixing devices such as pop rivets or screws should be effectively sealed to prevent which are difficult to clean.

3.7.4 Passageways and doorways through which product is transferred by rail or trolley should be of sufficient width to prevent contact of the product.

3.7.5 Doors opening from processing rooms to the exterior should be fitted with self-closing devices. Strip type P.V.C type curtains should only be used on openings through which packaged products pass.

3.8 Stairways

3.8.1 Stairways in processing areas should be constructed of corrosive resistant material impervious to moisture, and have solid treads, closed risers and solid side curbs. Side curbing should have a minimum height of 150mm measured at the leading edge of the tread.

3.8.2 Personnel walkways positioned over conveyor belts or any part of the processing system must be constructed of approved material and of a design that will prevent product contamination.

3.9 Windows

3.9.1 Where provided, windowsills should be not less than 1.2m from floor level.

3.9.2 Internal sills should be sloped down at a 45^0degree angle.

3.9.3 Where windows face an area that produces noxious odours, the windows should be non-opening.

3.10 Insect Proofing

7.1 Exterior openings that may admit flies and insects shall be fitted with removable insect proof screens, or other approved methods on insect control.

3.10.2 Where personnel enter edible product processing areas either directly or indirectly from outside the building, consideration should be given to having a corridor with subdued lighting between the outside of the building and the entrance to the room to limit problems with the entry of insects. Insect electrocution devices may be installed in such a passageway.

3.11 Rodent and Vermin Proofing

Buildings should be constructed to be rodent and other vermin proof. Doors should be tight fitting.

3.12 Ventilation

3.12.1 Ventilation may be provided by natural or mechanical means. Mechanical ventilation should achieve at least 4 air changes an hour.

3.12.2 With mechanical ventilation systems, air intakes should be properly located to avoid the intake of potentially contaminated air.

3.12.3 Ventilation equipment of all types should be located so that air from inedible product areas cannot be introduced into the ventilation system.

3.12.4 Where roof mounted air conditioners, evaporative coolers and the like are located near production lines, edible product should not be contaminated with condensate or overflow water.

3.12.5 Where mechanical ventilation systems are installed to help exclude dust from buildings, the system is not to be regarded as a substitute for adequate insect proofing.

3.13 Lighting

3.13.1 The intensity of lighting required to be provided at work surfaces should be of a standard not less than the standard listed for below:

- in the case of evisceration, washing, packaging, breaking up and piece preparation sections _ 400 lux
- in the case of product inspection station – 600 lux
- in the case of stunning, bleeding and defeathering sections – 200 lux
- in the case of chillers, freezers, carton storage rooms, loading dock and any associated marshalling areas – 220 lux

3.13.2 Shatterproof protective shields should be provided over exposed lights.

3.13.3 Artificial lighting must not distort colours or cause shadows at the inspection surface. This also applies where product is prepared for inspection or is packaged.

3.14 House Points

3.14.1 The use of long hoses should be avoided.

3.14.2 A sufficient number of hot and could hose points should be provided to service the area.

3.14.3 Hose racks should be constructed of rust resistant materials.

3.14.4 Hoses should be of a material and colour that does not cause marking of surface they contact.

3.15 Noise Factor

It is well recognized that prolonged exposure to excessive levels of noise is detrimental to health and hearing. Processing areas of poultry establishments can be excessively noisy unless particular attention is paid to this problem. An awareness of the need to control noise levels is important at the design stage, as problems can be avoided that would be expensive to rectify later.

4. TRUCK WASH AREA

4.1 Location

A paved and drained area should be provided adjacent to the bird unloading area for cleaning bird carrying vehicles after loading.

4.2 Basic Construction and Facilities

4.2.1 the surface of the truck wash area should be durable, impervious to liquids and have a drainage gradient of at least 1:50.

4.2.2 Drainage from the truck wash area should be connected to a manure sump or equivalent facility.

4.2.3 Where a nuisance would otherwise be created, suitable curbing and shielding should be provided to confine splash to the area.

4.2.4 Drainage lines from these areas should be of sufficient diameter to accommodate the high level of solids associated with washing these trucks. Mild steels piping are unsuitable for drainage lines in this area because of the corrosive nature of effluent from truck washing and of strong detergents.

4.2.5 An adequate supply of potable water under sufficient pressure should be available for cleaning operations.

4.2.6 Where vehicles are likely to be cleaned after daylight hours, the area should be well lit.

4.2.7 A suitable cabinet or shed should be provided at truck washing sites for storing disinfectants and detergents.

5. POULTRY PROCESSING BUILDINGS

5.1 Introduction

This section deals with the requirements for slaughtering and processing of poultry.

5.2 Separation of Operations

The premises should have separate rooms for the following:

- bleeding and defeathering;
- evisceration and washing;
- packaging operations.

5.3 Holding Pens or Areas

5.3.1 Adequate holding pens or areas for live birds should be provided on the premises.

5.3.2 The pens or areas should be covered, paved, curved. Effectively drained and well ventilated, with particular attention being paid to the control of extreme temperature.

5.3.3 Wash down points should be provided to effectively clean the area.

5.4 Crate Washing Area

5.4.1 A concrete paved, drained and curbed area, together with a hot and cold wash down point, should be provided adjacent to the holding pens for washing poultry crates.

5.4.2 Live poultry crates should be constructed of impermeable non-corrosive materials, which are capable of easy cleaning.

5.5 Bird Shackling Area

An efficient method of restraint to prevent the escape of poultry during shackling should be provided.

5.6 Stunning

5.6.1 Stunning equipment is installed it should be automatic and designed so that birds of all sized will make adequate contact with the stunning processes, and be humane in operation.

5.6.2 The bird stunner should operate at a voltage and for duration sufficient to render all birds unconscious during the killing operation. A Voltmeter to indicate the voltage being used should be fitted to the equipment.

5.7 Bleeding area

5.7.1 The bleeding area should be separated from the shackling area by walls of a height not less then 3 meters from floor to ceiling or wall plate except for self-closing doors for personnel and openings adequate for the passage of poultry carcasses.

5.7.2 The bleeding operation should be separated from the scald area by a wall or partition to at least shackle conveyor height.

5.7.3 Blood from the bleeding area should be removed via a blood drain or by a continuous automatic method.

5.7.4 Where bleeding is carried out with automatic equipment the method should be stated and be humane in operation.

5.7.5 Hand wash and sterilizing facilities should be available in the immediate vicinity of the bleeding area, whether this operation is performed manually or not.

5.8 Scalding and De-feathering Area

5.8.1 Should be separated from the evisceration area by full height walls except for openings adequate for personnel and for the passageway of poultry carcasses.

5.8.2 Adequate facilities should be provided in the scald and de-feathering area for the removal of steam to the outside atmosphere.

5.8.3 Scalding equipment should be designed and constructed so that the potable water line cannot be contaminated and so that there is a continuous flow of potable water into the scald. The overflow from the scald should be large enough to allow feathers and water to be freely taken away.

5.9 Evisceration Area

Should be separated from the washing and packaging area by walls not less than 3m from floor to ceiling or wall plate except for openings adequate for personnel and for the passage of poultry carcasses.

5.10 Refrigerated Storage

The premises should contain a room or rooms adequately constructed and equipped for keeping under refrigeration all killed poultry likely to be on the premises at any one time.

5.11 Spin Chillers

Where in-line chilling facilities are incorporated in the processing line, they should comply with the following:

- in two-tank systems, water should not flow from the initial tank to the final tank.
- Overflow drains should be connected direct to the drainage system.
- The rate of change of water should approximate 0.75 liters per poultry carcass. Details of the method of chlorination and the resultant free residual chlorine levels should be stated in the specifications accompanying the plans.

5.12 Glycol Bath

Where these facilities are provided to case harden poultry, the following information should be included in the specifications accompanying the plants:

- the capacity of the bath
- the method of installation
- the operating temperature

5.13 Hand-wash Facilities

Handwash facilities should be provided at the recommended ratio of one hand basin per 10 employees and be sited at all doors and major workstations.

5.14 Sterilizers

An adequate number of sterilizer units should be provided. Approved chemical sterilizers would be acceptable.

5.15 Carton and Wrapping Materials Storage

5.15.1 The storage and dispensing facilities provided in the processing room should be adequate and capable of keeping wrapping materials above the floor.

5.15.2 A storeroom for holding cartons, and packing and wrapping materials intended for use in connection with edible production should be provided. It should be separate from all other storage facilities and should be constructed so that it is insect, vermin and dust proof and provided with racks not less then 300mm above the floor on which materials may be stored. Cartons may be stored away from the walls on pallets.

5.16 Inedible Material

5.16.1 Poultry waste should be stored, pending its removal from the premises, in leak proof containers with close fitting covers located outside the premises, under cover, on a concrete slab\ that is kerbed and drained.

5.16.2 Poultry waste containers shall be leak proof, capable of being effectively cleaned and distinguishable from containers for edible product by being coloured red or marked with a red band not less than 100mm in width around the outer circumference of the top of the container.

5.16.3 Buildings intended for rendering purposes to produce or store inedible tallow, meat meal and fertilizer should be constructed in accordance with requirements for slaughter and dressing rooms. They should be completely separated from edible departments except for a minimum opening for passage of inedible materials. Such a passage must slope away from the processing area.

5.16.4 Where treatment of by-products is to be other than by dry rendering the building should be located not less than 30mm from any building in which birds are slaughtered or dressed or in which poultry meat is treated or stored.

5.16.5 The walls of the rendering department should be not less than 3.6m high from floor to ceiling or wall plate.

5.16.6 Odour control and exhaust systems should be approved by the State Pollution Control Committee.

5.17 Cleaning Materials Store

5.17.1 Facilities of adequate size for storing cleaning materials should be provided.

5.17.2 Where the store opens onto edible product areas, the door should be of a solid panel, full height, self-closing type.

5.17.3 The cleaning materials store should be separately drained, adequately ventilated and fitted with shelving.

5.18 Toxic Chemicals

Residue compounds of toxic nature should be stored in separate premises well away from buildings used for processing and storing poultry meat and meat products.

6. CHILLERS

6.1 Introduction

This section is applicable to mechanically refrigerated areas designed to cool or hold cooled product, between processes under controlled temperature conditions.

The' Type' applied to chillers in this chapter indicates only the purpose, the holding period or the type of product held. It does not indicate any variation of standards.

This chapter deals with the following types of chillers:

- active (hot) – for primary cooling or chilling of carcasses
- holding – for holding carcasses or parts after primary chilling and products before dispatch.
- Thawing – for thawing frozen product to permit boning or further processing.

6.2 Location and Capacity

6.2.1 Chillers, other than those designed as inedible product chillers, should be in an edible product section of the premises.

6.2.2 The location of chillers relative to other work areas should be carefully considered, to minimize the risk of contamination of product.

6.2.3 Sufficient space should be available in the chiller to accommodate the quantity of product processed in such a way that the cooling airflow is able to reduce or maintain the temperature of the product to the desired degree.

6.2.4 Product storage should be arranged in such a way that good air circulation can be achieved. Containers or storage racks should be not less than 150mm off the floor.

6.3 Specific Construction Requirements

The interior of each door should be provided with a mechanism to allow personnel to escape of personnel are accidentally locked inside.

6.4 Thermometers

6.4.1 A direct or remote thermometer should be provided to each chiller.

6.4.2 The temperature sensor should be in a position that indicates the actual room temperature.

6.5 Hose Points

Sufficient hot and cold hose points should be provided to permit effective cleaning of all chillers.

6.6 Racking and Shelving

6.6.1 Where chillers are provided with racking or shelving for storing product, rust resistant material should be used.

6.6.2 Where necessary, shelving or trays to confine drip from the product should be provided, with the bottom shelf not less than 300mm above the floor.

6.7 Drainage

6.7.1 Floors in chillers should be graded at a minimum of 1:100

6.7.2 All floors should be graded to trapped floor drains located either in the chiller or outside the chiller door.

6.7.3 The defrost drain from cooling coils should be of adequate size to cope with the water from the melting ice on the coils and, if applicable, the water used to defrost the coil.

6.7.4 On ceiling mounted cooling units, the drain water should be confined by suitable insulated drip trays directly connected to the drainage system.

6.7.5 Provision should be made so that during the defrost procedure, air circulating fans on the unit being defrost can be switched off to prevent carryover of defrost water.

6.8 Thawing

6.8.1 A chiller used for thawing frozen carcass or carton product to allow boning or further processing should be equipped with machinery to maintain a maximum air temperature of 15 degrees Celsius during the entire thawing operation.

6.8.2 A recording thermometer should be installed to give a continuous record of the air temperature.

6.9 Condensation

6.9.1 Refrigerated room should be designed and operated in a way that prevents the formation and accumulation of condensation on overhead structures and ceilings.

6.9.2 Refrigerated departments should not be constructed above other departments unless the lower is to operate at temperature consistently below those of the upper.

6.9.3 Main refrigerant lines should not be routed through working areas.

6.9.4 Where forced draught unit coolers or air distribution ducting are located in the work area, both the drain trays and ducting should be insulated.

7. FREEZER FACILITIES AND COLD STORES

7.1 Introduction

This section is applicable to freezer and cold store facilities on processing plant.

This section refers to the following ‘types’ of freezers and cold stores:

- Blast freezers – including freezing tunnels and plate freezers
- Chiller freezers – facilities with both chilling and freezing capabilities.
- Freezer stores – for holding frozen meat and meat products.

7.2 Location

7.2.1 The same standards of hygiene should apply as in other edible product area.

7.2.2 Freezers and cold stores should be away from inedible product departments, except where the freezers and cold stores are used exclusively for inedible products.

7.2.3 Freezers and cold stores should be located so as not to create condensation problems in other departments.

7.2.4 Where freezers open into non-refrigerated areas, the exchange of air between two areas should be minimized by fittings such things as effective air curtains, clear plastic doors or automatic doors.

7.3 Specific Construction Requirements

The interior of each door should be provided with a mechanism to allow personnel escape if personnel are accidentally locked inside.

7.4 Drainage

Floor waste outlets should be sealed by a screw cap or other approved device when the room is operating as a freezer.

7.5 Freezing Tunnels

Where freezer tunnels are used for freezing exposed product, the tunnel should be installed so that its full length is capable of being opened for cleaning.

7.6 Thermometers

A recording thermometer or telethermometer to indicate operating temperature should be provided for each freezer or freezing capacity.

The temperature sensor should be in a position that indicates the actual temperature in the product area.

7.7 Under floor Ventilation Pipes

Where under floor ventilation pipes are provided, they should be rodent proof.

8. LOADING DOCKS

8.1 Introduction

Loading docks provide protection to product and its associated packing materials during loading and unloading at the premises.

8.2 Design Considerations

Consideration should be given to the following points:

- the methods of handling the product
- the relative heights of loading docks, and truck decks.
- the equipments necessary, such as dock levelers, to minimize operational delays.

8.3 Location and Site

- The loading dock should be convenient to product store.
- The loading dock should be readily accessible to the means of transport being used.
- Sufficient space should be available along the length and in from of the loading dock to allow for the movement of transport vehicles.

8.4 Basic Construction

8.4.1 The loading dock should be provided with an awning to protect the product during loading or unloading.

8.4.2 Where unpackaged product is handled over the dock, the dock should be designed so that where possible the area is enclosed.

8.4.3 The height from the roadway to the underside of the awning should be such that all vehicles likely to be used have adequate clearance.

8.4.4 The area nominated for truck movement should be finished with a well-drained surface, which is impervious and durable.

8.5 Marshalling Areas

8.5.1 Where the product load has to be assembled in advance, the marshalling area should be protected from the above elements.

8.5.2 The marshalling areas should be capable of being maintained at a temperature of not more that 10 degrees Celsius.

9. EMPLOYEE AMENITIES

9.1 Provision of Amenities

Amenities for employees should be provided in accordance with the following standards as recommended.

9.2 Location and Access

9.2.1 Amenities for employees should be convenient to the workplace in an area free from undue noise and odour.

9.2.2 Access to the amenities must not cause employees from edible product departments to pass through inedible product departments or vice versa.

9.2.3 Pave walkways should be provided from the work place to the amenities.

9.2.4 It is recommended that, where practical, the walkways be covered.

9.3 Separation

Amenities for male employees should be separate and distinct from those of female employees, except that common dining rooms may be provided.

9.4 Basic Construction

9.4.1 Walls, floors and dealings should be constructed of durable materials that are easy to clean.

9.4.2 Walls, and ceilings should be of light colours that will reflect light and give a bright appearance to the rooms.

9.4.3 Internal ledges should be sloped down at an angle 45 degree.

9.4.4 Exterior openings should be insect proof and construction should ensure that rodents and other vermin are excluded.

9.4.5 If mechanical ventilation is installed, it should be capable of providing at least 4 air changes an hour.

9.4.6 Fresh air intake for mechanical ventilation should be located in such a way that air is not contaminated.

9.5 Required Facilities

9.5.1 Dining Room

Where common dining rooms have a direct connection with change rooms, entrances to the change room should be provided with full-height doors and privacy screens.

9.5.2 Toilet Rooms

- Floor waste of suitable size should be provided in water closet and urinal rooms.

- Water closets and urinals should not be in shower rooms.

- Doors leading to toilet rooms should be full height, completely fill the opening and be self-closing.

- Toilet rooms without means of natural ventilation should be effectively mechanically ventilated to the outside air.

- Where mechanical ventilation is used, it should be activated by a common switch with the artificial lighting in the area.

- Toilet rooms which are mechanically ventilated should have a louvered section at least 300mm x 300mm in the lower panel of the door.

- Toilet rooms should not be entered directly from a workroom but entrance through an intervening dressing room or ventilated toilet room vestibule is permitted.

- Toilet rooms should not be entered through a shower room.

- Toilet rooms for female employees should be provided with facilities for the disposal of personal hygiene items.

9.5.3. Shower Room

Adequate supply of hot water and cold water should be connected to showers and a method provided to remove vapour from shower rooms.

9.5.4. **Change Room**

A separate change room equipped with lockers and seating and having direct access to showers should be provided.

9.5.5. **Furniture and Fittings**

- Lunch tables should be provided with smooth impervious tops and edges, and be constructed so the tables can be readily clean.
- Adequate seating that can be readily cleaned should be provided in lunch rooms.

9.5.6. **Hand Wash Basins**

- Hand washbasins should be provided in sufficient number on close aproximity to the toilet room entrance. The basin should be operated by pedal or thigh and supplied with liquid soap dispensers.
- Acceptable hand drying systems and receptacles for used towels should be provided.
- An adequate supply of warm water should be connected to the basins.

9.5.7. **Lockers and Seating**

Lockers should have dimensions of at least 375mmx 1.5m, and have 45 degree slopping tops. Alternatively, the area between the tops of the lockers and the ceiling may be enclosed.

Lockers should be mounted 400mm clean of the floor.

10. EQUIPMENT

10.1 Introduction

- Equipment should be constructed of such materials and in such a way as to easily cleaned and properly maintained.
- The design, construction, installation and use of equipment must preclude the adulteration of product with lubricant, metal fragments, contaminated water or other contaminants.

- Materials used, which directly contact the product, should be non-absorbent, non-toxic, odourless and unaffected by the product and cleaning compounds.

- Equipment should be selected and designed to contribute to a good working environment, with carefully attention being given to factors such as safely, noise, vibration and meat.

- Product contacting equipment should be constructed from approved material.

10.2 **Metal**

- Metal used in the construction of equipment should be rust resistant.

- Galvanized steel may be used for certain application, provided the galvanizing is to the standard of 'high quality and smooth finished' commercial hot dip.

10.3 **Plastics and Resins**

Plastics and resinous materials should be resistant to abrasion and heat, shatterproof and non-toxic. In addition, the materials must not contain a constituent that will migrate to poultry meat or other poultry products in contact with it.

10.4 **Unacceptable Materials**

Aluminum and copper, including their usual alloys, are not acceptable for equipment which contacts edible product. Copper water pipes are acceptable.
Cadmium is not acceptable in any manner or form in equipment used for handling edible product.
Lead may not be used in equipment contacting edible product, except that it may be used in soldering in an amount not exceeding 5 percent.
Paint is not acceptable on any product contact surface.

10.5 **Design and Construction**

10.5.1. Equipment should be designed and constructed so that all parts are readily accessible for cleaning and inspection.

10.5.2. All interior corners should be rounded and of sufficient radius to allow easy drainage and cleaning. All welds should be continuous, smooth even and flush with adjacent surface.

10.5.3. External surfaces of equipment that do not come in contact with food should be free of open seams. Gaps, crevices and inaccessible recesses.

10.5.4. Casketing and packing materials should be non-toxic, non-porous, non absorbent and unaffected by food products and cleaning compounds.

10.5.5. Seals and bearings should be located outside the product contact area.

10.5.6. Equipment requiring lubrication should be designed so that product is not contaminated by lubricant. Removal drip trays should be provided where necessary.

10.5.7. Where necessary, equipment should be self-draining capable of being drained.

10.6 **Installation**

10.6.1. Where permanently installed equipment, or equipment not readily movable, is not completely and effectively sealed to the floor or wall in a way that precludes the entrance of moisture between the equipment and the floor or wall, the equipment should be positioned to allow easy access for cleaning and inspection.

10.6.2. Water wasting equipment should be connected directly to the establishment drainage system to ensure that the water does not flow over the floor.

10.6.3. Drainage connections from equipment used for processing edible product should be connected to the drainage system by an interrupted connection.

10.6.4. Anti-back siphonage devices or other measures must be provided to prevent back siphonage water to equipment.

10.6.5. Electrical control cabinets and exposed conduit should be mounted at least 100mm clear of the wall and conduit should be mounted at least 25mm clear of the wall.

10.6.6. Exposed plumbing services should be mounted at least 25mm clear of walls, columns or ceilings.

10.6.7. Lagging on pipes in edible product areas should be suitably protected to prevent contamination of edible products.

10.6.8. Lighting should be installed so that surface mounted or recessed light fittings preclude dust and dirt accumulation. Suspended light fittings should have a 45^0degree slopping cap and the suspension apparatus should not allow the accumulation of dirt. Light fittings in processing or storage areas must be provided with shatterproof shields or covers. The light produced should not distort colours.

10.7 Compressed Air

10.7.1 Where compressed air is used in any equipment that allows the air to come into direct contact with edible product, possible contamination from moisture and oil from the compressor should be prevented by providing an effective drain in the compressed air storage tank and an effective filter, located as near as possible to the outlet, in the air discharge line.

10.7.2 Air filters should be capable of frequent cleaning.

10.7.3 The air exhaust ducts should be directed away from edible product and where possible, should be discharged to the outside atmosphere.

10.8 Tables

Tables on which edible product is handled or otherwise treated should, when possible against walls, be provided with suitable splash back.

10.9 Work Platforms and Stands

10.9.1 Work platforms should be of rust resistant metal and be of a closed surface design or concrete construction.

10.9.2 Foot stands should be constructed of rust resistant metal, approved plastic or other approved materials and be of a closed surface design.

10.9.3 Standards for preventing edible product containers from contacting the floor should be of rust resistant metal or other approved material and raise the containers at least 300mm from the floor.

10.10 Giblet Washing Equipment

10.10.1 Where giblets are manually washed, equipment should consist of a removable perforated rack positioned in a special sink or other container in such a way that product is prevented from contacting the bottom of the container.

10.10.2 An overhead spray system should be provided supplying potable water at sufficient pressure to effectively clean the product.

10.10.3 Wash water should not be able to accumulate in the container.

10.11 Hand Wash Facilities

10.11.1 Hand washbasins of approved design and material should be provided at convenient locations in all processing stations. They should be of sufficient size to retain splash and be pedal of thigh operated. Soap and paper tower dispensers should be provided with each unit.

10.11.2 Hand washbasins should be connected directly to the drainage system.

10.11.3 Hand rinsing facilities with connections that permit a continuous flow of water shall be provided at strategic positions on the processing line.

10.12 Sterilizers

10.12.1 Should be provided at strategic locations in processing areas. They should be of sufficient size to allow complete immersion of equipment in hot water or an approved chemical sterilizer. Sterilizers should have water connection means for maintaining the temperature of the water, and an overflow. Where sterilizers are used in association with hand washbasins the overflow may be directed into the bowl of the hand washbasin.

10.12.2 Where applicable an approved chemical may be used for sterilizing.

10.13 Plucking Machines and Spray Washing Equipment

Should be designed and constructed so that feathers, contaminating materials and water are confined to minimize ‘splashing’ of surrounding areas.

10.14 Perforated Trays

Used with equipment for washing and draining of product should be removable.

10.15 Closed Long Chutes

Closed long chutes or pipes used for transfer of product should be demountable or provided with inspection plates for cleaning purposes.

10.16 Equipment Washing

10.16.1 An equipment washing area independently drained and adequately ventilated should be available in a part of the premises set aside for that purpose. This area should be separated from processing, packaging and storage sections but with direct communications.

10.16.2 The dimensions of the washing area should be commensurate with the operations of the premises and the number of product containers used for delivery purposes.

10.16.3 A wash up trough of adequate size to allow immersion of containers, trays, utensils and other portable equipment normally used in the premises should be provided. A permanent and adequate supply of hot and cold running water should be laid onto the trough. Racks for air drying of containers, trays, utensils and other equipment should be provided.

10.16.4 Automatic washing machines used in the cleaning of product containers should operate in a way, which ensures that a continual flow or potable water is maintained. Where recycled water is used in such machines, an approved process, which ensures that potability is maintained at all time, should be in operation.

11. POULTRY SMALL GOODS

11.1 Introduction

This section covers processed poultry products other than canned poultry products and includes poultry that is subject to curing, smoking, cooking and poultry containing additives.

11.2 Location

Small goods operation should be located in an edible product section of the premises.

11.3 Basic Construction

Construction requirements should be in accordance with the sections headed “Basic Construction” and “Service”.

11.4 Specific Construction Requirements

11.4.1 Separate rooms should be provided for the following operations:

- boning, cutting and trimming poultry
- curing
- smoking/ curing

11.4.2 The minimum distance from the floor to a wall or ceiling plate in the cooking room should be 3m.

11.5 Poultry Meat Preparation Room

11.5.1 Where poultry meat is to be prepared by boning, slicing, mincing or the like, a separate room should provided..

11.5.2 The poultry meat preparation room should be constructed in accordance with the section "Basic Construction" except that where meat is held so as not to rise above 7 degrees Celsius. The room needs not be temperature controlled.

11.6 Bringing and Pickling Rooms

11.6.1 Where bringing or pickling operations are carried out, a separate room, capable of being temperature controlled at or below 10 degrees Celsius, should be provided.

11.6.2 Prickling tubs should be of sanitary construction and of approved design.

11.7 Poultry Meat thawing Rooms

11.7.1 Where thawing I s by immersion in water, the rate of change of water should ensure that the mass of water exchange in a unit of time is at least equal to the mass of meat treated in the same time.

11.7.2 Thawing should be constructed in accordance with the section headed "Chillers".

11.7.3 The method of disposal of used cartons and wrappings should be in a manner so as to be continuous and not cause product contamination.

11.8 **Smoke Room**

11.8.1 Where smoke rooms are not individually drained, the floor should slope at a minimum gradient of 1:50 to a floor waste or wastes immediately outside the room.

11.8.2 An adequate method of extracting smoke to the outside atmosphere should be provided.

11.9 **Cooking Room**

An adequate of dispensing wrapping material for storing and mixing ingredients and additives intended to be used in the product.

11.10 **Packing Room**

The method of dispensing wrapping material for storing and mixing ingredients and additives intended to be used in the product.

11.11 **Ingredient Room**

11.11.1 A separate room or rooms should be provided for storing and mixing ingredients an additives as intended to be used in the product.

11.11.2 Ingredients should be stored in approved containers, which are clearly labeled as to contents.

11.11.3 Rust resistant shelving with the bottom shelf at least 300mm above the floor should be provided.

11.11.4 The room should be equipped for locking.

11.11.5 Facilities should be provided for storing restricted additives under security.

11.12 **Refrigerated Storage Rooms**

11.12.1 Adequate refrigerated storage space should be provided for all poultry products, other perishable ingredients and perishable finished products likely to be on the premises at any one time.

11.12.2 Chillers and freezers should be in accordance with the section headed "Basic Construction", "Chillers" and "Freezers".

11.13 Carton Store

11.13.1 Dust and vermin proof facilities of adequate size should be provided.

11.13.2 Rust resistant shelving with bottom shelf at least 300m above the floor should be provided.

11.14 Vacuum Packaging Operations

Steam producing shrink tunnels should be vented direct to the outside atmosphere.

11.15 **Equipment Wash Areas**

11.15.1 Where equipment wash areas are provided, they should be supplied with hot and cold wash points, drained as for other wash areas and supplied with facilities to exhaust steam and vapour to the outside atmosphere.

11.15.2 Where the areas are within a processing room, provision should be made to prevent splash onto edible product and exhaust steam and vapour to the outside atmosphere.

11.16 **Gear Storage Area**

An area should be provided for the storage of aprons and gear when employees are not in the processing areas.

11.17 **Hand wash Facilities and Sterilizers**

11.17.1 Approved foot or thigh operated basins or troughs, liquid soap dispensers and approved hand drying systems should be located at personnel entrance to processing areas.

11.17.2 Hand wash basins liquid soap dispensers and approved hand drying systems should be strategically located within processing rooms,

PART-2. PROCESSING PROCEDURES DESIGNED TO ENSURE AN ACCEPTABLE STANDARD OF HYGIENE IN POULTRY PROCESSING

1. POULTRY RECEPTION AREA

1.1 Constant attention should be paid to housekeeping in the poultry reception and shackling area to ensure superstructure, motors, ledges etc. are keep free of cobwebs, feathers, dust, vermin etc.

To assist in feather control and to minimize the danger of airborne contamination entering the premises, the poultry reception an shackling area should be cleaned as often as practicable during the days operation and at least at every "in-plant" work break. The entire area should be subjected to a thorough cleaning at the completion of each day's work.

1.2 Rejected, moribund and unhealthy, poultry should be killed immediately and place in containers, provided with close fitting lids, which are clearly marked "Inedible Product".

1.3 Coops, crates and cages used to transport live poultry should be cleaned after each use. Crates, coops or cages should be kept in good repair.

1.4 Sufficient hose points should be provided for washing down and feather control.

1.5 A hand basin with hot and cold water laid on should be provided in close proximity to unloading and shackling.

2. BLEEDING AREA

2.1 The bleeding and de-feathering area should be separated from the reception area by walls except for closing doors fro personnel and openings adequate for the passage of poultry carcasses from one section to another.

2.2 Poultry should be suspended for bleeding or placed in bleeding cones and should not be placed on the floor after bleeding.

2.3 The floor area of any bleeding section should be curbed or so constructed to prevent the escape of blood to other area. Blood should be contained during killing operations, and collected during in-plant work breaks and placed in containers clearly marked for inedible product, for removal from premises. It shall not be washed down into the wastewater disposal system. Where bleeding tunnel is used, the tunnel and containers should be cleaned during in-plant work breaks.

3. SCALDING

Where controlled water temperature methods are used, agitated scaled tanks should be supplied with a continuous flow of water a t minimum fate of 0.25 of a litre per carcass scalded per minute, and the tanks emptied at least once every working day. Where water supplies are limited, constant replenishment must be carried out to ensure the water is maintained in a reasonably clean condition.

4. DEFEATHERING

4.1 Continuous collection and removal of feathers from the de-feathering and scalding areas during processing operations and n-plant work breaks should be carried out. Feathers should be removed from the areas for treatment or disposal. Drains in plucking areas leading to waste water disposal system should be effectively screened to exclude feathers.

4.2 Containers to receive condemned, inedible or contaminated materials should be provided throughout the premises. A container, drain or mechanical removal system should be positioned at both the head puller and foot-unloader to ensure that all heads and feet fall directly into them. Containers used for condemned, inedible or contaminated materials should be identified by the word" Inedible" clearly marked in a red or other contrasting colour and should not be used for handling edible products.

4.3 Overhead conveyor shackles and droppers used in connection with the stunning, killing, scalding, de-feathering and removal of head and feet should be cleaned by means for a jet spray or other approved method before being returned to the shackling area or being used for further processing of the de-feathered carcass. Where a single line chain system is used to convey carcasses between shackling and evisceration section, the shackle washer should be located within the premises and positioned after hock cutting. Where rotary brushes are used to clean shackles, the brushed must be continually, sprayed with water jets to clean the brushes.

5. EVISCERATION SECTION

5.1 The evisceration area should be separated from the de-feathering section by full height walls except for openings adequate for personnel and for the passage of poultry carcasses from one section to another.

5.2 Before evisceration the outer surface of each dressed poultry carcass should be washed by spray or constant flow or water.

5.3 Viscera should be removed within an hour of bleeding and body-opening cuts must be made in such a manner that the intestinal tract is not pierced.

5.4 Vent opening machines or guns should be flushed between each venting operation. Water flushed from a vent gun must be directed away from suspended poultry carcasses.

5.5 A knife or implement used in the venting operation should not be used to cut into any other part of a poultry carcass unless first sterilized.

5.6 Where vent opening is performed manually a facility for the rinsing of hands implements should be provided. A facility of such nature should also be provided where an employee acts in a "back up" capacity to an automatic vent-opening machine.

5.7 Evisceration tables and benches, where used in manual processing, should be self-draining by means of perforations or a permanently angled surface. A cleaning system should be provided to enable regular cleaning of the table or bench surface. Each set of viscera should be removed from the bench surface immediately after being drawn. Containers used for the collection of viscera should be emptied on a continuous basis to avoid overfilling and spillage.

5.8 Additional appliances such a scissors, knives, evisceration forks and lung rakes should be placed on an approved rack or facility at appropriate work stations when not in use.

5.9 Water flow in an evisceration trough should be in the opposite direction to that in which poultry carcasses are traveling so that carcasses leave at the point where clean water enters.

5.10 Water jets or sprays continuously in operation should be provided along both sides of an evisceration trough or belt for the rinsing of employees' hands and implements during the evisceration process. Where a water supply is limited, a

control flow would be acceptable. Hands and implements should be rinsed on a regular basis.

5.11 Where giblets are collected for human consumption, giblets, product contact surfaces and water used in the collection process, should not be contaminated by hand rinse water.

5.12 Hand operated implements used in the evisceration process should be maintained in a clean condition by frequent rinsing in a floe or spray of clean water. When the implements become visibly soiled they should be set a-side for cleaning and replaced with clean implements.

5.13 Poultry carcasses undergoing processing should not contact structural supports, stays, wall linings or personnel.

5.14 A hand hose or other approved device strategically positioned should be used by employees to rinse their aprons when soiled with faucal or intestinal material.

5.15 Automatic machines used in the evisceration section should be regularly checked to ensure that automatic cleaning sprays used for rinsing product contact surfaces operate effectively.

5.16 Adequate number of personnel should be provided for visual and manual inspection at strategic station at the processing line to ensure satisfactory processing procedures.

5.17 Inspection stations should be provided with hand rinse facilities, mirrors to view the back of the carcasses and retain containers. Facilities for the disposal of inedible material should be provided at the wash point to prevent splashing of the cleaned poultry carcass and other products.

6. WASHING

6.1 The inner and other surface of each eviscerated poultry carcass should be washed by a spray or constant flow of water. Faucal soilage not removed in washing should be trimmed off. Protection in the form of a shield, canopy or cabinet should be provided at the wash point to prevent splashing of the cleaned poultry carcass and other products.

6.2 Sprays used for poultry carcass washing should be adjustable to ensure thorough washing of all classes and sizes of poultry carcasses. Water volume should be regularly monitored to ensure effectiveness.

6.3 Where a trough is fitted under a spray cabinet, poultry carcasses passing through the cabinet should not contact water contained in the trough.

7. GIBLETS

7.1 Separation and recovery of giblets and cleaning of gizzards must be performed in a manner to avoid contamination.

7.2. Giblets should be separated from the viscera immediately after removal from the body cavity and cleaned, trimmed and washed under a continuous flow or spray of water.

7.3. Giblets should be chilled t 4 degrees Celsius or below within one hour of their removal from the viscera and drained to remove free ice and water prior to packing.

7.4. Giblets should not be placed within a dressed poultry carcass unless enclosed in an approved sealed bag of polyethylene of securely wrapped in other approved materials.

7.5. Giblets chiller tanks should be provided with an overflow sufficient to maintain sanitary conditions. Water flow should approximate 1 litre for every 10 poultry carcasses processed.

7.6. Where gizzards are transferred from automatic cleaning machines through pipes assisted by water or vacuum, access to such pipe for inspection and cleaning should be provided. Pipes used similarly for the transfer of hearts and livers should also be provided with access for inspection and cleaning.

7.7. Gizzards cleaned by automatic machines should be subjected to follow up manual inspection.

8. SPIN WASH

8.1 The amount of water necessary in a continuous spin washer must provide an overflow sufficient to maintain sanitary conditions and should approximate 1 litre per poultry carcass.

8.2 Poultry carcasses should not remain in the spin wash tank during breaks which exceed 15 minutes unless the temperatures of the water is lowered to and maintained at 4 degrees Celsius or below.

8.3 A spin washing appliance should be of a counter flow design so that the carcasses move into clean water as they are conveyed through the appliance to the discharge end.

9. CHILLING

9.1 Poultry should be chilled to 4 degrees Celsius or below within 1½ hours of evisceration.

9.2 Water intake necessary in continuous agitated immersion chillers should provide an overflow sufficient to maintain sanitary conditions and should approximate 0.75 liters per poultry carcass.

9.3 Agitation in continuous chillers, either mechanical or air, should stop when elevators or conveyors that remove carcasses from the unit are turned off, in order to minimize water uptake of poultry carcasses. Only filtered air should be used for agitation purposes.

9.4 Temperature of water in the spin chiller should not exceed 4^0 C.

9.5 Where an automatic chlorinator is used, regular monitoring should be carried out to ensure accuracy of quantity added.

9.6 Benches, trays, tables or chutes receiving poultry carcasses from spin chillers should be self draining.

9.7 Where ice is added to continuous spin chillers, it may be accepted as portion of the minimum requirement of 0.75 litres of water per poultry carcass.

9.8 Ice used in poultry processing whether manufactured ice or ice made on the premises should be made from potable water and should be stored and handled to ensure that it is protected from contamination at all times. Personnel should not enter a crushed ice storage freezer where ice is augured from the floor unless the ice has been protected from contamination.

9.9 Non-agitated immersion chill tanks may be accepted where a water supply is limited provided the maximum temperature of the water in the tank does not exceed 4 degrees Celsius and is maintained in a reasonably clean condition.

9.10 Motors and drive gears located directly over spin wash and spin chill tanks should be provided with protective trays to prevent contamination of the product.

10. DRIP LINES AND DRAINING

10.1 Overhead drip lines should be positioned to avoid contamination of dressed poultry carcasses by drip or contact.

10.2 Drain trays or trough should be placed under overhead drip lines where they pass over a passageway or section where dressed poultry carcasses are being processed. Drainage from the tray or trough should be directed to a waste or drain.

10.3 The line should be positioned to ensure that suspended poultry carcasses would not contact plant personnel. The speed of the drip line should ensure that suspended poultry carcasses adequately drain.

10.4 The number of draining racks or draining facilities should commensurate with daily throughput of the premises.

10.5 Where poultry carcass, draining racks or other draining facilities are used by they should be positioned in such a manner to avoid drainage from one carcass to another.

11. PACKING AREA, PACKAGING AND PACKING MATERIAL

11.1 The poultry packing area should be separated from other sections to minimize contamination. A full separated is preferable.

11.2 Containers for storing and transporting of dressed poultry carcasses or products should be of material capable of being maintained in a clean condition.

11.3 Baskets and containers returned from an outside source should be cleaned before being used in processing operations and should be stored within the premises on an impervious floor while awaiting cleaning.

11.4 Returning baskets and containers, awaiting cleaning should be stored in a separate area located so as to minimize the risk of cross contamination to product and equipment. Water used in the cleaning of returned containers should not be used for the cleaning of other equipment.

11.5 Products containers cleaned by automatic washing machines should be subjected to follow up inspection.

11.6 Packing materials should be clean, unused, and free from contaminating substance and objectionable odours and of sufficient strength and durability to protect the poultry carcasses and poultry products from contaminations.

11.7 All packaging materials should be stored under sanitary conditions in a vermin proof dry area on racks located in minimum height of 300mm above the floor, or on pallets if located away from walls.

11.8 Where packaging material is used in the processing area adequate racks should be provided. The rack should be not less than 100mm above the floor and all packaging material should be place in the racks, not directly onto the floor. Pallets should not be used in the processing area unless made of approved impervious material

11.9 Poultry carcasses and poultry products whether wrapped or unwrapped should not be placed on the floor.

11.10 Unwrapped poultry carcasses and poultry products should not contact cold room walls or any surface likely to contaminate the product.

11.11 Poultry carcasses and poultry products should not be placed in a container used for evisceration purpose or a container for inedible products.

11.12 Trays and receptacles containing dressed poultry carcasses or poultry products should be placed on approved racks not less than 100mm above the floor.

11.13 Dressed poultry carcasses and poultry products should not be taken into or conveyed through rooms or areas that contain live poultry or refuse. The flow of products should be one of progressive processing toward final packaging and not in a reverse direction.

11.14 Wooden pallets should only be used in freezers and packaged product dispatch areas.

11.15 Where dispatching of bulk unwrapped product in P.V.C. crates is carried out, wooden pallets may be used provided each crate is individually covered with an approved non-absorbent material, adequate to protect the stored product.

12. BREAKING UP AND BONING OUT

12.1 Where poultry meat is prepared by boning or cutting up, a separate room should be provided. Where limited space precludes separation by a room, the breaking up or boning out operation should be carried out under hygienic condition in an area free from any source of contamination.

12.2 Hand wash facilities, readily accessible to all employees should be provided in boning and cut up areas.

12.3 Poultry meat placed in product containers stored on racks under work tables and benches should be protected from contamination from the underside of work tables and from residue from work surfaces above.

12.4 Where packaging material including plastic bags and tray packs are stored on shelves, or in a racking system, above work tables and benches, regular checking of the cleanliness of the storage system should be carried out to ensure that products below are not exposed t contamination.

12.5 The packing of tray packs with poultry pieces should be conducted in a manner that minimizes the stacking of unwrapped packs on top of one another.

12.6 Tables, bins and containers used for the receival of unwrapped carcasses for bagging and pieces processing, should be self-draining. Bins or containers used for the receival of unwrapped pieces should also be self-draining.

12.7 To avoid product deterioration from increased temperatures, carcasses and pieces awaiting processing should flow continuously in an orderly manner to ensure uniform turn over of accumulated product.

12.8 Where saws and implements are contaminated during the processing of poultry carcasses or poultry products, the affected equipment should be thoroughly cleansed and sanitized.

12.9 Regular monitoring of the sanitary condition of skinning machines should be carried out during processing operations.

12.10 The wearing of approved impervious gloves by personnel engaged in bagging and pieces processing is desirable.

13 THAWING

13.1 Dressed poultry carcasses and poultry products should not be thawed except under approved conditions and should not be refrozen.

13.2 If thawed in a tank, a continuous flow of water sufficient to keep the water clean should be provided and the temperature of the water should not exceed 20 degrees Celsius.

13.3 If thawed in the atmosphere, the temperature of the air in the facility in which thawing take place should not exceed 15 degrees Celsius

14 **PERSONNEL**

Management should ensure that:

14.1 Persons engaged in handling live poultry should change their outer protective clothing and wash and sanitize their hands and wash their boots before being permitted to be engaged in processing operations. Soap and water is acceptable for washing hands.

14.2 Employees rotating their duties during processing operations should wash and sanitize their hands, aprons, knives, pouches and wash their boots before moving to another work section.

14.3 Employees should wear clean protective outer garments at the commencement of each day's work.

14.4 Employees should remove protective aprons, gloves and equipment before entering the toilet and wash their hands after using it.

14.5 A rack should be provided so suspend employees' aprons and equipment when not in use.

14.6 Protective clothing provided to employees engaged on outside work or handling live poultry should be readily identified and used for that purpose only. Aprons must be kept clean and when no in use suspended on a rack in an area apart from other aprons.

14.7 A person entering a section where unwrapped product is handled should wear head covering of a type that will prevent hair from falling onto the product.

14.8 Protective gloves including woven steel mesh gloves worn by employees should be clean at the commencement of each day's work. Gloves should be replaced when deterioration or peeling occurs. The wearing of gloves does not exempt the operator from having thoroughly washed hands.

14.9 An employee whose clothing and body (as far as in visible) is not clean should not take part in processing operations.

14.10 Employees should wash their hands, boots and aprons before rejoining processing operations.

14.11 An employees suffering from an infectious disease, whether notifiable by law or not, suffering from a skin infection or who has an open wound or an unclean bandage on an exposed part of the anatomy, should not take part in processing operations.

14.12 Maintenance staffs servicing machinery during processing operations are dress in a manner that will not contaminate equipment and product.

14.13 During periods where food is manipulated by hand, any jewellery that cannot be adequately disinfected should be removed from the hands. Personnel should not wear any insecure jewellery when engaged in food handling.

14.14 Precaution should be taken to prevent visitors to food handling areas from contaminating food. These may include the use of protective clothing.

14.15 Responsibility for cleaning compliance by all personnel with all requirements of sections 14 should be specifically allocated t competent supervising personnel.

15. EFFLUENT

15.1 Effluent containing solid materials should be directed through a separator, indirect waste separator or save-all which should effectively retain the solids prior to the discharge of the effluent in such a way as not to create a nuisance, and which should emptied and cleaned daily. Effluent treatment must comply with conditions of appropriate authorities.

16. DISPOSAL OF INEDIBLE OFFALS

16.1 If facilities are not provided for immediate treatment of offal, it should be placed in leak proof containers with close-fitting lids and stored on a drained and curbed concrete slab located outside the processing area but under cover, pending disposal at the end of the day's operations.

16.2 Offal should be disposed off on a daily basis. Where large quantities of offal are involved dry rendering or wet rendering should be undertaken.

17 GENERAL

17.1 Food should not be consumed in processing premises other than in designated areas.

17.2 Light fittings should be so constructed to minimize the collection of dust. Protectors of non-shattering material should be fitted over, light bulbs and fluorescent tubes in processing areas.

17.3 Dogs, cats and other domestic animals shall be excluded from areas where poultr is processed or stored.

17.4 Smoking and expectorating shall not be permitted in poultry handling area.

17.5 Appropriate signs relative to the removal of protective outer garments and washing of hands should be prominently displayed throughout the premises, and signs prohibiting the entry of dogs and cats should be displayed.

17.6 Approved chemicals only should be used in a poultry slaughter-house.

17.7 Hoses when not in use should be stored on reels or rack. Wash down hoses should not be immersed in water or contact product in the act of filling containers or the like.

17.8 The premises shall not be used for any purpose other than processing poultry.

17.9 All unused equipment and extraneous material should be removed from processing premise.

17.10 Chilled poultry products should be transported in a refrigerated vehicle.

17.11 Such vehicles should conform to acceptable hygiene standard and temperatures should be adequate to maintain the product in a sound wholesome condition during transportation.

17.12 Internal lining should be of an approved hard wearing non-absorbent material and be constructed so as to be capable of being cleansed.

17.13 Vehicles used to convey inedible offal should not be reused unless they have undergone cleaning and sanitizing.

17.14 A lot/batch is a quantity of food product under identical conditions, all packages of which should bear a lot number that identifies the production during a particular time interval.

18. CLEANING

18.1 Every part of, and everything in, a plant shall be kept clean, tidy, and free of vermin and in good repair.

18.2 Without affecting the generality of 18.1:

(a) all floors, steps, stairways, doors, windowsills and drains, and all equipment used in the process shall be cleaned at the end of each day’s operations;

(b) all vehicles, coops, crates and cages used for the delivery of live poultry to a plant shall be cleaned after each delivery.

(c) All chains, shackles, droppers and other equipment used for the conveyance of poultry, the supports of that equipment, all overhead lights and their support, all overhead joist, beans, pipes and all other overhead things shall be kept clean and free of rust, scale, flaking paint and dripping lubricant;

(d) All refrigerated facilities shall be dry-cleaned daily;

(e) All toilets and the floors of the rooms in which they are situated shall be washed daily with hot water to which a detergent has been added;

(f) All buildings, loading bays and holding areas, and the environs of all such places, shall be cleaned so as to prevent the accumulation of dust, debris and manure; and

(g) All amenity rooms shall be cleaned daily.

In carrying out any cleaning required under subparagraph 18.2, a hose shall not be used in the vicinity of poultry meat, which is being processed.

18.3 Roadways and yard in the immediate vicinity of and serving the premises should be kept clean.

18.4 A permanent cleaning and disinfecting schedule should be drawn for each establishment to ensure that all areas are appropriately cleaned and that critical areas, equipment and material are designed for special attention. A single individual who should preferably be a permanent member of the staff pf the establishment and whose duties should be independent of production, should be appointed to the responsible for the cleanliness of the establishment. He should have a thorough understanding of the significance of contamination and the hazards involved. All cleaning personnel should be well trained in cleaning to techniques.

19. STORAGE AND TRANSPORT OF THE END PRODUCT

The end product should be stored and transported under such conditions as will preclude the contamination with and / or proliferation of micro-organisms and against deteriorating of the product or damage to the container. During storage, periodic inspection of the end product should take place to ensure that only food, which is fit for human consumption, is dispatched and that end-product specifications are complied with when they exist. The product should be dispatched in the sequence of the numbers.

ANNEXURE – XIII: ABATTOIR CATEGORY – B

Those abattoirs approved by BAFRA for commercial purpose with relatively less capacity of 100-300 heads of animals per week and less than 15,000 birds per week.

1. Location

a) The slaughterhouse shall be located in a place that has been approved by the BAFRA

b) The place shall be readily accessible by motorable roads.

c) The location should not be exposed to flooding or landslides.

d) There must be an adequate supply of potable water.

e) The location shall be such that wastewater, effluents and solid waste can be disposed of properly without polluting the environment.

f) There should be no industry, dwellings or livestock farm or the religious site or religious community in the immediate vicinity.

g) There should be adequate lighting for ante-mortem and postmortem inspection.

2. Construction

The abattoir shall have:

a) A suitable and sufficient lairage or pens for holding animals awaiting slaughter.

b) A simple building structure with an effective protection from weather to enable slaughter and dressing to be carried out undercover. It should have at least two separate rooms, one for stunning cum bleeding and another for carcass dressing.

c) The floors, walls, ceiling and windows should be constructed of materials that are impervious to moisture, smoothly finished, rust resistant, not readily subject to chipping or flaking and easy to clean and disinfect.

d) There must be simple over-head rail system or a structure to enable the dressing and cutting of carcasses into parts in a hanging position and off the floor.

e) Suitable facilities for emptying and cleaning of stomachs and intestines.

f) A suitable separate facility for storage of hides, horns, hooves, fat and other waste materials until it is removed.

g) There should be properly build toilets and the area should be fenced.

3 Equipment and Facilities

a). All equipment, implements and utensils used in abattoirs or establishments which come in contact with meat should present a smooth impervious surface, be resistant to corrosion, made of a material which is non-toxic, does not transmit odour or taste, free from pits, crevices, non-absorbent and capable of withstanding repeated exposure to normal cleaning and disinfection.

b). All surface of tables, benches or shelves that are liable to come into direct with meat should have an impervious, smooth surface that is free from imperfections. Tables on which edible product is handled, suitable splash backs should be provided; and tables having water on their working surfaces should be provided with turned up edges and self-draining.

c). An adequate supply of potable water under sufficient pressure and means to heat this to + 82^0 C for washing and sterilization.

d). Suitable, sufficient and separate receptacles with closely fitting covers for collecting and removing all waste and fresh meat not intended for human consumption.

4. Hygienic Operating Requirements

a). The establishment shall be kept clean and shall be disinfected weekly and at any other times as determined by the BAFRA Inspector.

b). The premises of an establishment shall not be used for any purpose other than for the holding of animals and for slaughtering of animals.

c). No animal other than animals for slaughter should be allowed to enter the holding the premises.

d). All equipment, implements, tables, utensils including knives should be cleaned at frequent intervals during the day, and immediately and thoroughly cleaned and disinfected whenever they come in contact with diseased material, infective material or become contaminated. They shall be cleaned and disinfected at the conclusion of each working day.

e). No meat product, or ingredient used in the preparation of a meat product, shall be exposed to contamination or deterioration.

f). Detergents, sanitizing agents and disinfectants should conform to public health requirements and should not be allowed to come into contact with meat. Any residue of these cleaning agents used for the washing of the floors, walls or edible product equipment should be removed by thorough

rinsing with potable water before the area or equipment is again used for handling meat.

g). Pest Control.

Preventing access to the edible product processing and packaging rooms from birds, insects, rodents and other vermin is essential; and as such, the following measures should be instituted:

(1) An effective and continuous programme for the control of insects, birds, rodents or other vermin within the abattoir or establishment should be maintained.

(2) Should pests gain entrance to the premises, approved eradication measures should be instituted. The eradication of pests should always be carried out under skilled supervision and with the full knowledge of the inspector.

(3) Only pesticides approved for use in establishment by the competent authority should be used and the greatest care should be exercised to prevent any contamination of the meat. Pesticides should only be employed if other precautionary methods cannot be used effectively.

(4) Pesticides or other toxic substances should be stored in separate locked rooms or locked cabinets and dispensed or handled only by authorized and properly trained personnel. Every precaution should be taken to avoid contaminating the meat.

(5) When in the opinion of an inspector, any equipment, utensil, room or compartment at a establishment is unclean or its use would be in non-compliance with this manual, he shall detain the article and no equipment, utensil, room or compartment so detained shall again be used until made acceptable.

(6) The outside surrounds of premises shall be maintained in a clean and tidy condition at all times.

5. Hygiene and Health of Personnel

a). Medical examination should be carried out prior to employment of employees and should be repeated yearly or when clinically or epidemiologically indicated. The medical examination should pay particular attention to:

i) infected wounds and sores

ii) enteric infections including parasitic diseases and carrier states especially with respect to Salmonellae ; and

iii) respiratory diseases.

b). The management or inspector should take care to ensure that no employee, while known or suspected to be suffering from or to be a carrier of a disease capable of being transmitted through meat, or while afflicted with infected wounds or sores or diarrhoea, is permitted to work in any establishment in a capacity in which there is a possibility of such a person directly or indirectly contaminating meat with pathogenic micro-organisms. Any ill person should immediately report to management or Inspector that he is ill.

c). Any person who is cut or injured should discontinue working with meat and until he is suitably bandaged and should not engage in any establishment in the preparation, handling, packaging or transportation of meat. No person working in any abattoir or establishment should wear any exposed bandage unless the bandage is completely protected by a waterproof covering, is conspicuous in colour and is of such a nature that it cannot become accidentally detached.

d). The manager of any slaughterhouse should maintain health records of employees for future monitoring by inspectors.

e). Every person engaged in an establishment should wash his hands frequently and thoroughly with soap and detergents under running warm potable water while on duty. Hands should be washed before commencing work, immediately after using lavatory, after handling contaminated material, and whenever else necessary.

f). Every person engaged in abattoir work should maintain a high degree of personal cleanliness while on duty, and should be appropriately attired including (a) head covering and (b) footwear, all of which articles should be washable unless designed to be disposable and which should be maintained in a clean condition consistent with the nature of the work.

g). Every person who visits an area in an abattoir or establishment where carcass or meat are handled should wear clean protective clothing.

h). No part of an abattoir or establishment used for slaughter of animals, dressing of carcass, preparation, handling, packaging or storing of meat should be used for deposit of personal effects or clothing.

i). Any behaviour which can potentially contaminate the meat, such as eating, use of tobacco, chewing, should be prohibited in any part of the establishment used for slaughtering or dressing of carcass or for the preparation, handling, packaging or transportation of meat.

j). Gloves if used in the handling of meat should be maintained in a sound, clean and sanitary condition. The wearing of gloves does not exempt the operator from having thoroughly washed hands. Gloves should be of an impermeable material except where usage would be inappropriate with the work involved.

6. Principles to be observed during slaughtering and preparation of meat

a). Every slaughter animal must undergo ante- and postmortem inspection.

b). No animal should be slaughtered or dressed in any establishment except when an inspector is present.

c). Any animal in an unreasonably dirty condition should be cleaned to the satisfaction of the inspector before it is allowed to enter the killing floor, so as to lessen the risk of contamination.

d). All animals brought to the slaughter floor should be slaughtered without delay.

e). The bleeding should be as complete as possible. If blood is intended to be used in preparation, it should be collected and handled hygienically and should in no case be stirred with the hand but only with hygienically acceptable implements.

f). The slaughtering, sticking, bleeding and dressing should be carried out with care so as to ensure the production of a clean carcass, head and edible offals. None of the parts should come in contact with the floor and all contamination should be avoided.

g). Carcass should be separated from each other to avoid contact and contamination once the removal of the hide, skin or pelt has commenced. Separation of carcass, heads and viscera should be maintained until they have been examined and passed by the inspector.

h). The following points should be observed in the skinning operations;

(i) All species, except pigs, should be skinned and this should be done before the carcass is eviscerated in such a manner as to avoid contamination of the carcass. Pigs should be scoured of all bristles, scurf and dirt. The water in the scalding tanks should be changed as frequently as possible.

(ii) Skinned carcass should not be washed in a manner which will allow water to enter either the abdominal or thoracic cavities prior to evisceration.

(iii) Lactating or obviously diseased udders should be removed from all classes of animals. Removal of such udders should take place at the

earliest appropriate time during dressing. No secretion should be allowed to contaminate the carcass and therefore udders should be removed in such a manner that the teat and udder substance remains intact and without any milk duct or sinus being opened.

i). Evisceration should be effected without delay.

j). During dressing the following should be observed:

(i) The discharge of any material from the oesophagus, paunch, intestines or rectum, or from the gall bladder, urinary bladder, uterus or udder should be effectively prevented.

(ii) Any offals intended for human consumption should be removed from the carcass in a manner that will prevent contamination of the organ removed.

(iii) Intestines should not be severed from the stomach during evisceration and no other opening should be made during evisceration into any intestine/paunch. In the case of sheep, lambs/goats and pigs, the removal of stomach and intestines should be carried out without separation.

(iv) Spermatic cords and pizzles should be removed from the carcass.

k). No hides, skin or pelts should be washed or de-fleshed or left in any part of the abattoir or establishment used for slaughtering or dressing of animals or the preparation or holding or any meat intended for human consumption.

l). All stomachs, intestines and all inedible materials should subsequently be treated in parts of the establishment destined for this purpose in accordance with the recognized practices which should pay attention to cleanliness and hygiene.

m). Faecal and other objectionable matter contaminating carcass during dressing should be carefully trimmed off.

7. Transportation of meat and edible offal

a). Meat should not be carried in any means of transport that is used for conveying live animals.

b). Meat should not be carried in the same means of transport as other goods in a way that may adversely affect the meat.

c). Stomachs should only be transported when thoroughly cleaned or scalded, and heads and trotters only when skinned or scalded or dehaired.

d). Meat should not be placed in any means of transport which has not been cleaned before loading and if necessary also disinfected.

e). Carcass, sides and quarter should be hung during transport or placed in a suitable manner on racks or similar equipment.

(g) Suitable racks and closed containers should be used for the transport of unwrapped edible offal.

(h) The floor of the conveyance should not be walked on during loading or unloading except by persons wearing suitable protective clothing and covering over their footwear.

ANNEXURE – XIV: ABATTOIR CATEGORY – C

Those temporary abattoirs approved by BAFRA for slaughter of yaks in the field on seasonal basis.

1. Location

1. The site should be identified by the concerned Dzongkhag in collaboration with *Gup* and relevant *Tshogpa* members and shall be approved by BAFRA.

2. It should be located away from industry, human settlements, livestock farm and religious site or religious community settlements

3. There should be adequate potable water supply and facilities to dispose off effluents and biological waste safely without polluting the environment.

4. The place shall be readily accessible by motor roads and must not be windy and dusty.

2. Construction

The abattoir shall have:

1. A suitable and sufficient holding area animals awaiting slaughter.

2. A simple building structure which shall provide effective protection from weather and enable slaughter and dressing to be carried out undercover. The floor should be concrete which can be readily cleaned and disinfected. It should have at least two separate rooms, one for stunning cum bleeding and another for carcass dressing.

3. A suitable biological waste disposal pit of adequate capacity safe disposal of effluents and other biological waste.

4. There should be properly build toilets.

5. An ample supply of potable water supply for washing animals, carcasses, hand-washing of meat workers, and an abattoir, etc.

3. Equipment and facilities

The premises shall have:

1. There must be simple over-head hook or a structure to enable the dressing and cutting of carcasses into parts in a hanging position and off the floor.

2. An approved stunning equipment.

3. A clean knives and adequate utensils for dressing of dressing of carcasses

4 Hygienic operation requirements

1. The concrete platform shall be kept clean and washed before and after the slaughter of each animal.

2. No animal other than animals for slaughter should be allowed to enter the premises.

3. All equipments, platform, tables, utensils, knives should be cleaned whenever they come in contact with infective material or become contaminated. They should be washed at the end of each working day.

4. No carcass or part thereof shall be exposed to contamination.

5. Hygiene and health of meat workers

1. The management and BAFRA inspector shall ensure that no employee suffering from a disease capable of being transmitted through meat is permitted to work.

2. Every person working in the establishment should wash his/her hands thoroughly with soap before commencing work, immediately after using toilet, after handling contaminated material and whenever necessary.

6. Principles to be observed during slaughtering and preparation of meat

1. Every slaughter animal must undergo ante mortem and post mortem inspection.

2. Any animal in an unreasonably dirty condition should be cleaned to the satisfaction of the inspector before it is allowed to enter the slaughter room.
3. The bleeding should be as complete as possible.