

GUIDELINES FOR STORAGE AND HANDLING OF STERILE CONSUMABLES



**NSW HEALTH PEAK PURCHASING COUNCIL
AS / NZ 4187 WORKING PARTY**

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INTRODUCTION

This document reflects the coordinated efforts of the **NSW Health Working Party for the Implementation of Section 9 - Australian / New Zealand Standards 4187"**.

It is intended that these guidelines be adopted uniformly, however, it is understood that some requirements may not be immediately achievable. Therefore, it is *highly recommended* that this document be utilised as a guide by those responsible for the handling and storage of sterile consumables to work towards compliance with AS/NZ 4187 specifically Section 9.

This document:

- Is for Executives and Officers who can change or influence purchasing, supply and inventory strategies;
- Is for Stores / warehouse Specialists / Clinical Product Advisers / Nursing Staff / Supply personnel / and any individual who directly or indirectly deals with the storage and handling of sterile consumables;
- Is designed to be a catalyst for the discovery of new strategies, and the identification of best practices and the most appropriate methods of storing and handling pre-sterilized consumable items.

To maximise the opportunities that can be realised from the use of this document:

It is *recommended* that:

- Those who are responsible for quality assurance and supervision familiarise themselves with all the sections of this guideline;
- Personnel involved in direct or indirect handling of sterile consumables be trained and educated to enable them to correctly do so;
- The guidelines stipulated in this document are incorporated in existing orientation programs. Should such programs not exist, it is *highly recommended* that this document be the basis for initiating one;
- Where possible, rotation and education of stores personnel through site visits to theatres and other sections where sterile consumables are kept or utilised be encouraged.

WORKING PARTY FOR THE IMPLEMENTATION OF AS/NZ 4187 - 9

Organised by the NSW Health Peak Purchasing Council in September 1996. The purpose of the group was to address the difficulties being encountered by Areas in their compliance with AS/NZ 4187 section 9, specifically the Storage and Handling of Sterile Consumables in the Purchasing / Supply / Stores / Warehousing environment.

The NSW Health Working Party for the Implementation of AS/NZ 4187 - 9 members were nominated by Area Health Service Chief Executive Officers throughout NSW.

The Working Party's objectives were:

- Identify the Best Practise model for the Storage and Handling of Sterile consumables and establish accreditation guidelines for supply departments.
- Design an education course for stores / warehouse personnel to provide full understanding of housekeeping procedures.
- Produce a guideline to assist warehouse and other hospital personnel in the Storage and Handling of Sterile consumables as well as provide a full understanding of the importance of hygiene and housekeeping.
- Produce other forms of educational tools with a view to increasing knowledge and awareness of the storage and handling of sterile consumables. [E.g. video]
- Formulate the best strategies that will enable the compliance by Areas with AS/NZ 4187 section 9 and forward recommendations to the NSW Health Department.
- Liaise with other organisations to obtain the best possible strategies. [I.e. private sector / industry groups / other states / associations / etc]

Prior to the undertakings of the Working Party a comprehensive statewide survey was circulated across the state to determine:

- Levels of understanding and compliance with AS/NZ 4187 section 9
- Current stores / warehouse practices and trends
- Sterile consumables handling practices and trends
- Hygiene and housekeeping practices and trends.

This document is the result of members' extensive research and review sessions.

An education package has been developed by the Working Party to highlight some of the elements in this guideline. View it online at the PPC website <http://www.ppc.health.nsw.gov.au> or the PPC intranet site at <http://internal.health.nsw.gov.au/business/ppc/> under Workgroups, AS/NZ4187.

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1. HYGIENE AND MICROBIOLOGY

1.1 DEFINITIONS:

1.1.1 Contamination

Break in the integrity of sterile consumables.

The introduction of microorganisms into sterile tissue or the presence of infectious agents on skin, tissues, surgical instruments or substances i.e.

DUST

1.1.2 Germ

Germ is a common name for microorganisms, especially the ones known to be able to produce disease.

1.1.3 Microorganisms

Microorganisms are minute living things individually too small to be seen by the naked eye. They include:

- Protozoan
- Fungi (yeasts and mould)
- Bacteria, spores
- Viruses

The majority of microorganisms make a vital contribution to the welfare of our civilisation. Examples include marine and freshwater microorganisms forming the basis of the food chain. Our food industry relies on microorganisms for the crucial steps in processing many of the foods we love such as breads, cheeses, vinegar and alcohol.

Unfortunately however, some microorganisms can cause disease and these are known as pathogens and are more commonly referred to as **germs**.

a] Protozoa

Protozoa are smaller than fungi and are made of one cell. They are able to move and can survive dryness and heat, e.g. Protozoa causing malaria and sleeping sickness can be carried by the Anopheles mosquito.

b] Fungi

Fungi are mostly very simple one-celled organisms, but some contain many cells and are large enough to see. They cause skin diseases such as athlete's foot, tinea and ringworm.

c] Bacteria

Bacteria are made of one cell and many are harmless. Many bacteria grow in the human body where the temperature is ideal and food is readily available. Tuberculosis, whooping cough and gonorrhoea are examples of diseases caused by bacteria.

Staphylococcus aureus [also known as Golden staph or MRSA] is the bacterium responsible for most wound infections in hospitals. It also causes boils, carbuncles, impetigo and food poisoning.

d] Spores

Some bacteria are known to produce spores that are like plant seeds. They live indefinitely in a fixed state without food, water and moisture and until the ideal conditions for reproduction and multiplication occur, they can withstand very high and low temperatures. Tetanus and anthrax are diseases caused by spore forming bacteria.

e] Virus

Viruses are the smallest organisms capable of infecting almost all animals and plants. They can only grow inside the cells of other organisms. Many viruses are harmless, however, some are capable of causing dangerous diseases, e.g. HIV / AIDS, hepatitis A, B, C and chicken pox.

FEATURES OF MICROORGANISMS

(That Are Relevant to sterile consumables)

Microorganisms multiply rapidly in suitable conditions and can reproduce every 20 minutes:

- They thrive in temperatures between 6 and 60 degrees Celsius.
- They may need oxygen.
- They can grow with a minimum of nutrients.
- They will require moisture.

1.2.1 Where are Microorganisms?

- They are in the air and everywhere.
- They can be present in non-living matter, on solids, in liquids and in dust.
- They live in and on the human body. These are called **normal flora** and may colonise without causing disease.

1.2.2 What do Microorganisms do?

- They multiply and spread.
- Infection or disease occurs when a sufficient number of microorganisms reach a susceptible site, multiply and cause harm to the host.

1.2.3 Microorganisms can be spread in several ways, but usually by:

- **Contact.** Direct via personal touch with contaminated hands. Indirect via contaminated surfaces, packs, crates, door handles, taps, furniture, equipment, etc
- **Airborne.** Particles from packing materials, e.g. dust, lint skin scales which are blown about in air currents.

- **Droplets.** From sneezing, coughing or wet cleaning, aerosols which float around in the air and land on people or surfaces.

1.2.4 How do microorganisms effect the work of warehouse / Store Personnel?

- They contaminate.
- They are present on the hands, skin and clothes of workers.
- They are found on all the boxes, packs and surfaces and may be transferred in the course of your daily work.

In a hospital environment microorganisms are always in abundance. Infection may spread very rapidly because sick people have a low resistance and are therefore more susceptible to further infections. All precautions must be taken to prevent this. Stores / warehouse personnel have a direct responsibility to the patients.

1.2.5 How do we manage the risk? By:

- Eliminating / isolating the microorganisms
- Preventing their transmission
- Protecting the susceptible

This means instigating practices and procedures whereby the **TRANSFER OF MICROORGANISMS IS ELIMINATED OR AT LEAST REDUCED**. Packaging and wrapping materials are used to protect the content of the package and **INHIBIT THE PASSAGE OF LINT/DUST PARTICLES AND MICROORGANISMS INSIDE**. **PATIENTS HAVE THE RIGHT TO HIGH STANDARD EQUIPMENT AND PRODUCTS USED IN THEIR CARE.**

1.2.6 It is *highly recommended* that the integrity of the pack be maintained by careful / minimal handling, i.e.

- Ensure nothing is done to break the seal, or to tear, crack, puncture or wet the covering pack.
- Guard against accidents. Simply dropping an article on the floor is enough to cause minute [microscopic] damage not visible to the naked eye, depending on the covering. Microorganisms / dust in the air can penetrate paper /fabric when it falls to the floor.
- Keep the area vermin free.

Note: manufacturers may use various covering/packing materials but remember plastic is the only one that is both waterproof and impermeable to all microorganisms. It is recommended that care be taken to ensure packaging is not compromised.

1.2.7 Reduce incidences of soiling / contamination by:

- Careful handling, storage and delivery to final destination.
- Preventing moisture [therefore prevent the transfer of microorganisms]

RECOMMENDATIONS:

- All sterile consumables that get wet or show any evidence of being wet for any reason be considered un-sterile and not be used under any circumstances. Allowing the package to dry out does not solve the problem. Brownish stains around margin and distorted wraps are signs of dried damp.
- Aerosol sprays not are used around sterile consumables.
- Alcohol impregnated wipes / bactericidal wipes be used for cleaning surfaces as evaporation quickly leaves surfaces dry.
- Packs not be marked or written on. Markings introduce the possibility of contamination by creating a moist medium for transfer of microorganisms through the covering.
- Rubber bands or sticky tapes not to be used to bundle sterile items together, as it compromises the integrity of the pack.
- Food or drinks are not taken in or consumed in any storage area.

Remember as human beings our skin is covered with microorganisms therefore all workers are considered sources of infection.

1.2.8 How can we reduce contamination?

PREVENTION:

a] Health

- Maintain your well being by eating the foods your body requires to keep it healthy.
- Due to the presence of Normal Flora on the skin and in our lungs, report all:
- Skin breaks, infections or rashes. Gloves are **NOT** to be used in place of occlusive waterproof dressings to cover cuts and abrasions. [Use gloves for cleaning purposes only]
- Respiratory tract infections, influenza, coughing, sneezing, runny nose etc.

Gain medical advice. Some conditions preclude working with sterile stock until they have cleared up.

b] Personal hygiene

- Ensure your personal habits and cleanliness are of the highest standard.
- Bath / shower before coming to work.
- Wear clean clothes everyday
- Wash and dry hands regularly **this is the single most important on-going prevention activity you can do.**

1.3 HAND WASHING

RECOMMENDATIONS:

HAND WASHING AND DRYING FACILITIES IN THE WAREHOUSE SPECIFIC FOR THE USE OF SUPPLY / STORES PERSONNEL BE INSTALLED. [Separate

from the toilet hand washing and drying facilities]

When to hand wash and dry:

- At the beginning and end of work
- Before entering the *dedicated clean store area*
- Before and after handling food
- After using the toilet
- After removing gloves [use gloves for cleaning purposes only]
- When hands are visibly soiled
- After blowing nose [use a tissue, and discard after use]
- When in doubt. [Use a paper towel/tissue to turn the tap off after hand washing.]

How - See diagram [Appendix A]

- Use liquid soap and warm running water
- Wet hands all over, work up a good lather and cover all surfaces thoroughly.
- Rinse well and dry on clean paper towel. Drying hands after washing is equally important, as microorganisms will multiply rapidly on wet hands.

1.4 OTHER DEFINITIONS [Of Terms Used in this Text]

1.4.1 Cross Contamination / Infection

Cross contamination / infection is said to occur when microorganisms are transferred from one surface to another or one body to another.

1.4.2 Cleaning

Cleaning is the removal of all foreign materials from an object and the reduction in the number of microorganisms from a surface. This may be accomplished through a process such as washing in detergent and water.

1.4.3 Disinfection

Disinfection is the destruction of non-sporing organisms by using either heat or chemicals.

1.4.4 Sterilization

Means the complete destruction of all microorganisms including spores.

1.4.3 Sterile Consumables

In this document refers to commercially prepared pre-sterilised consumable items.

1.4.4 Medical / surgical devices

Commercially prepared consumables. [e.g. oxygen tubing, nasal cannulae, bandages, etc.]

1.4.5 Colonisation

The presence of microorganisms that are not causing harm

1.4.6 Opportunistic

A microorganisms that does not ordinarily cause disease but can become pathogenic under certain circumstances, such as when moved to another place on / in the body, e.g. Urinary tract infection caused by bowel bacteria.

2. RECEIVING, UNLOADING, STORAGE, PICKING, PACKING AND RETURN

2.1 RECEIVING

2.1.1 Receiving Dock Signage

The aim of good receiving procedures is to ensure that all sterile consumables received are intact and undamaged.

RECOMMENDATIONS:

Clear signage advising the following be used:

- a) Deliveries and receiving times. [Delivery information on dock area including direction boards / arrows throughout the site]
- b) Clear warning discouraging the leaving / dumping of deliveries without proper receiving by stores / warehouse personnel.
- c) Clear statement waiving responsibilities for dumped deliveries and the consequences.
- d) Clear notice for delivery vehicle engines to be immediately turned off upon arrival at the receiving dock area.

2.1.2 Receiving Dock

RECOMMENDATIONS:

- a] Receiving docks be undercover and protected from all weather conditions [sited to best advantage / facing the best possible position preventing the continuous access of external air to stores / warehouse].
- b] Awnings not be so high that rain and direct sunlight can enter.
- c] A system to disperse vehicle fumes be utilised.
- d] Sterile consumables received at receiving bays, docks, platforms be protected from dust, dirt, direct sunlight and rain at all times.
- e] Clearly marked safety lines be in place to protect stores/ warehouse personnel from delivery vehicles.

2.1.3 Inspection Prior to Unloading

RECOMMENDATIONS:

Prior to unloading, all sterile consumables be inspected to ensure integrity:

- If any damaged or contamination is found, the damaged / contaminated items are not to be accepted.
- Check for watermarks and carton swelling which could indicate that the carton has been wet. When in doubt, items that may have been wet are not to be accepted.
- Sterile consumables are considered contaminated and not accepted if their package seals are broken or not intact.
- If it has been determined that the vehicle used for delivery has been in an accident, appropriate inspection of sterile consumables is to be executed.

2.1.4 Separate Receiving

RECOMMENDATIONS:

Receiving of sterile consumables be separate from used linen, garbage and other perishable consumables. The following sections are to be established.

a] Temporary

Provide a space in or adjacent to receiving areas for the temporary storage of received sterile consumables whilst they are recorded, examined and when necessary, externally cleaned.

b] Inspection

Prior to unloading check / inspect the condition of deliveries i.e. integrity and condition of boxes.

- Provide a separate area dedicated for inspection.
- Conduct inspection in such a way that if damage exists, cross contamination is prevented.

Notes: If sterile consumables are delivered with excessive dust or dirt, these consumables are to be rejected and the supplier notified.

Stores / warehouse personnel are cautioned in the use of Stanley knives when opening boxes, [i.e. to avoid cutting through inner packaging that maintains the sterile status of sterile consumables].

c] Quarantine

Provide a space dedicated as a quarantine area to separate damaged consumables where possible. [This will enable the isolation of all faulty / damaged sterile consumables]

Quarantine area be signed as such and have a simple visible demarcation line if possible, e.g. painted lines on floor.

2.2 UNLOADING

RECOMMENDATIONS:

2.2.1 Unloading Mechanisms

Proper unloading mechanisms be used i.e. manual / forklift in line with Occupational Health & Safety guideline.

2.2.2 Handling Unloaded Consumable Items

Sterile consumables be unloaded separately from other items and located:

- Off the ground
- On a dedicated clean pallet
- On a dedicated clean trolley
[This allows safe processing and will prevent cross contamination]
- On racking [transit]

2.2.3 Before Leaving the Receiving Area

Dusts are to be removed from the outside of boxes prior to entering the sterile consumables area.

2.2.4 Storing Outside the Warehouse

Sterile consumables should never be stored unprotected outside the warehouse.

2.2.5 Delivery Documents

Sterile consumables deliveries have the vendor delivery docket / invoices attached to outer package. This will eliminate the need to break the second seal for paper work retrieval.

2.2.6 Mixing Deliveries

Vendors are advised never to mix sterile consumables with non-sterile deliveries [within the same shipper] to eliminate the risk of cross contamination and confusion with delivery documentations.

2.2.7 Documented Cleaning

Procedures are in place for regular documented cleaning [use of neutral detergent] and preventive maintenance of receiving equipment i.e. trolleys, hoist, trucks, and cyclic cleaning of the warehouse / store.

Notes: The regular documented cleaning is to be in accordance with the respective Area / hospital / infection control policy. Refer to sample documentation for cleaning and maintenance section pages 42 to 52.

2.3 STORAGE

RECOMMENDATIONS:

2.3.1 While items carried in health care facilities are stored in a dust controlled environment, sterile consumables require higher standards of storage

2.3.1 sterile consumables are generally stored according to manufacturer's storage recommendations, in one or both of the following ways:

a. Bulk

- Stored in unopened outer shippers / cartons within the general stores / warehouse area.
- Sterile consumables in the general stores / warehouse environment may be issued in bulk [i.e. in outer shippers / cartons].

b. Dedicated Clean Stores / warehouse Area [controlled environment]

- An area where sterile consumables are broken down into smaller units for issue should be allocated.
- This area be air conditioned with temperature and dust control.

Note: Stores / warehouse personnel are cautioned in the use of cutting devices when opening boxes, [i.e. to avoid personal injury and cutting through inner packaging that maintains the sterile status of pre-sterilized consumable items].

2.3.2 Sterile Consumables Storage Recommendations

a. Cartons / shipper be in a clean undamaged state prior to delivery to the ward area.

b. When storing within the general warehouse area care is taken to ensure that the items be:

- Protected from dust, dirt, rain and direct sunlight [avoid extreme heat conditions]
- Separate from non-sterile items
- Stored off the ground preferably on dedicated predominantly clean pallets or racking.

c. Inner cartons when used for dispensing in the ward area should be discarded when empty and not refilled.

d. Outer cartons / shippers are a source of contamination and should not be used for dispensing individual items.

2.4 PICKING

The aim of *dedicated clean store picking areas* is to ensure that sterile consumables and medical / surgical devices in opened outer packaging remains intact and

undamaged.

RECOMMENDATIONS:

2.4.1 Picking Area

Dedicated clean store picking areas be kept clean, dust and draught free and with temperature and humidity controls.

2.4.2 Picking Space

Dedicated clean store picking space be adequate and organised to permit suitable and effective picking, separation, identification and repacking. [As per section 4.6.2]

2.4.3 Repacking Area [for breaking down into smaller units only]

A dedicated clean store area be utilised where sterile consumables are broken down into smaller units for distribution to wards and departments [i.e. dressing packs, cotton balls, etc].

- a] The *dedicated clean store area* has air conditioning with temperature and dust control.
- b] Uniforms be used in the *dedicated clean store area*.
- c] Uniforms used in the *dedicated clean store area* be kept clean, dry and tidy and kept within that environment. [E.g. dustcoat]

2.4.4 Personal Hygiene

- a] Personal hygiene of stores/ warehouse personnel assigned to picking are be constantly monitored.
- b] Daily washing and the maintenance of clean, neat and tidy uniforms are be encouraged.

2.4.5 Separate Picking

Cartons of sterile consumables be broken down or divided, picked and packed separately from other items.

2.4.6 Procedures

Documented procedures be in place for regular cleaning of picking equipment, i.e. containers, trolleys, shelves, etc [clean and dry before every use]

2.4.7 Picking Accessories

Documented procedures be in place for the utilisation of plastic bags and other accessories used in picking [i.e. sealed / labelled / labelled sterile stock.]

2.5 RETURNS

RECOMMENDATIONS:

2.5.1 Notice of Return to Stores / Warehouse

Official Notice / approved Request to Return to Stores / warehouse Document, be forwarded to the stores department prior to the return of sterile consumables. A stores/ warehouse officer [trained in the correct handling of sterile consumables] should review and approve request for returns accordingly.

2.5.2 Condition of Returned Sterile Consumables

Return of sterile consumables be in **original unopened, double packaging** and clearly display manufacture dates with no evidence of exposure to adverse conditions.

2.5.3 Reasons for Return

Returns be separate from other items with an Official Notice / approved Request to Return to Stores / warehouse Document attached clearly stating the reasons for the return.

2.5.4 Previous Conditions

Storage and handling condition of the return be established prior to acceptance.

2.5.5 Quarantine Area

Returns are to be kept in quarantine areas until inspected or approved by the authorised supply officer.

2.6 REPACKING

RECOMMENDATIONS:

Sterile consumables are not to be repacked or reissued unless approved by the authorised supply officer.

3. HANDLING - SUPPLY / STORES DEPARTMENT

3.1 ITEM INTEGRITY

The integrity of sterile consumables is maintained by correct storage, handling and transportation from the Supply Department.

3.2 SHELF LIFE

Shelf life is considered as the maximum safe time that sterile consumables can be stored after sterilization and still be classed as sterile.

Factors that influence shelf life are **usually event related** (not time related). The following factors should be taken into account when assessing the sterility of consumables.

- Location of storage area.
- Types of shelving of storage area. (Open shelves and smooth surfaces.)
- Cleanliness of storage area.
- Ventilation of storage area.
- The amount of handling of sterile consumables.
- Likelihood of consumable items material deterioration
- Supplier expiry date on the pack
- Type of packaging.
- Method of transport.
- Environmental factors.
- Traffic flow in area.
- Consumable items rotation.
- Date of manufacture
- State of the pack [visual]

3.3 HANDLING

RECOMMENDATIONS:

3.3.1 Hands

Stores / warehouse personnel handling sterile consumables **MUST HAVE CLEAN DRY HANDS AT ALL TIMES**. The use of gloves is discouraged except for cleaning purposes only.

3.3.2 Cuts

Stores / warehouse personnel's cuts and abrasions "**MUST BE COVERED WITH OCCLUSIVE WATERPROOF DRESSINGS**". The use of gloves to cover cuts and abrasions is discouraged except for cleaning purposes only.

3.3.3 Uniforms

- A clean dry uniform be worn daily, kept in a clean / tidy manner and changed if soiled.
- When working in a *dedicated clean store area* a cover all / dustcoat be worn at all times. Ensure this coat is kept in the same area or environment and laundered daily.

3.4 DEVICES / EQUIPMENT

RECOMMENDATIONS:

- Covered trolleys and enclosed baskets utilised for the transport of sterile consumables be regularly cleaned [with warm water and neutral detergent], dried and maintained in good condition to allow adequate protection for sterile consumables.
- There be no rough surfaces in devices / equipment which could tear packages

Note: Stores / warehouse personnel are cautioned in the use of cutting devices when opening boxes, [i.e. to avoid personal injury and cutting through inner packaging that maintains the sterile status of pre-sterilized consumable items]

3.5 STORAGE AREA

[Controlled Environment Storage Area Dedicated for Sterile Consumables]

RECOMMENDATIONS:

HAND WASHING AND DRYING FACILITIES IN THE WAREHOUSE SPECIFIC FOR THE USE OF SUPPLY / STORES PERSONNEL BE INSTALLED. [Separate from the toilet hand washing and drying facilities]

3.5.1 Access

- *Dedicated clean store area* have limited and controlled access.
- Only authorised stores / warehouse personnel assigned to the area be permitted in the area.
- Occupational Health and Safety requirements are taken into account.

3.5.2 Racking / Shelving

- Shelves be open freestanding racks with walkways of sufficient width between them, to enable stores / warehouse personnel to move freely between racks to enable stacking and picking.
- Racking / shelves are in good condition and burr free.
- Racking / shelves keep sterile consumables off the ground and not too close to the ceiling, i.e. 220 mm off the ground and 440 mm from the ceiling.
- When shelving needs replacement, they be replaced with open dust-free shelves / baskets.

3.5.3 Signage

Shelves are to be clearly marked with sterile consumables details to eliminate unnecessary handling.

3.5.4 Containers

Where more than one type of sterile consumable is kept in a container,

appropriate dividers are used.

3.5.5 Environment

a] Conditions

- The storage area is kept free from dust, insects and vermin.
- The storage area is away from sources of ozone, e.g. sun and electrical motors [e.g. air conditioning plants], as ozone can deteriorate materials like latex and other polymers.

b] Surfaces

All walls, floors, ceiling lights and work surfaces be constructed so that seams are sealed and difficult to clean corners are minimised. Surfaces should be non-porous, smooth and can be easily cleaned.

Note: Surface irregularities can harbour microorganisms

c] Lighting and Ventilation

- Areas have good lighting, preferably flushed to prevent the accumulation of dust.
- Areas are well ventilated at a constant temperature.
- **The use of temperature and relative humidity gauges for monitoring purposes and air conditioning is highly recommended** [between 22 degrees C to 24 degrees C, with a relative humidity ranging between 35% to 68% at all elevations, specially under the roof.]
- Temperature in the storage area be regularly monitored and advise sought should temperature ranges falls under and / or exceed the recommended range.

d] Location

To facilitate cleaning, all consumable items are stored above floor level by at least 250mm, and from ceiling fixtures by at least 440mm and protected from direct sunlight. Proximity to lighting fixtures is to be taken into account.

3.6 CLEANING

RECOMMENDATIONS:

3.6.1 Floors

- Floors are kept clean and tidy on a daily basis.
- Floors are filter vacuumed or damp mopped.

3.6.2 Containers

Containers are to be kept clean, dry and in good condition.

3.6.3 Shelves

- Shelves should be cleaned regularly with alcohol impregnated / bactericidal wipes.
- Dry dusting is not recommended.

3.6.4 Cleaning equipment utilised for the above processes be colour coded according the NSW Health Colour Coding of Cleaning Equipment circular no 96/55 [appendix c] or relevant state standards.

3.7 ROTATION

RECOMMENDATIONS:

3.7.1 Consumable Items on Hand

- Ensure stock rotation to ensure sequential usage.
- May be broken down from bulk cartons into ready-to-use quantities.

3.7.2 New Consumable Items

A method of rotation and replenishment is to be in placed. Replenishment stocks are to be placed at the back of the picking container or to the left. Staff may then pick / take from the front of the bin or from the right.

Note: Departments are encouraged to establish their own in-house policy on sterile consumables rotation and sequence of picking.

3.7.3 Conditions

Inner packs [user pack e.g. basic dressing pack] are considered contaminated and not suitable for use if damaged, opened, wet or dropped on a dirty surface, e.g. floor.

3.8 STOCK LEVELS

RECOMMENDATIONS:

Stock levels be reviewed and revised on a quarterly basis. This will ensure the prevention of under and overstocking and reduce obsolescence.

4. TRANSPORTATION

When transporting within a health care facility or to another establishment, special consideration needs to be given to maintain sterility.

4.1 EQUIPMENT AND CONTAINERS

RECOMMENDATIONS:

4.1.1 Containers and Trolleys

- Dedicated containers and trolleys are to be used.
- Transported in sealable plastic bags, containers and bins to prevent dust or damage to packages.
- Trolleys / tubs / containers / bins be specifically labelled as belonging to specific Area Health Service - Supply Section, to prevent use for other purposes.

Note: sterile consumables may be repacked into clean undamaged cardboard boxes / containers, provided a **new clean** sealable plastic liner is **used for each load**

4.1.2 Condition of Equipment

Containers and trolleys be regularly cleaned with warm water and neutral detergent and allowed to dry before re-use. [As determined by your Infection Control and Domestic Services Cleaning policy]
Cleaning should at least be done weekly or as required.

4.1.3 Outer Shippers

Consumable items may be transported to the requester in the sealed outer shipping container provided it is clean and undamaged.

4.1.4 Small Packages

Small packages of should be given special care to prevent damage.

4.3 TRANSPORT VEHICLE CONDITIONS

RECOMMENDATIONS:

- a] Transportation vehicles used to transport sterile consumables between facilities be covered or enclosed and kept free of debris.
- b] Transportation vehicles should be well maintained to prevent weather damage, prevent dust and be able to protect and maintain the integrity of sterile consumables.
- c] Regular documented cleaning program [utilising the recommended neutral detergent with warm water] for transportation vehicles be in place. [Refer to page 52]
- d] Environmental check of the transportation vehicle be undertaken at least monthly and records kept.
- e] Transportation vehicles not be used for purposes other than transporting

clean items, i.e. not for the transportation of contaminated materials, etc.

4.4 STERILE CONSUMABLES IN TRANSPORT

RECOMMENDATIONS:

- a) When picked for transportation, are not to be exposed to the elements [e.g. left in trucks, vans, etc overnight or for prolonged periods.]
- b) Are not be exposed to contamination and/or mixed with:
 - Detergents, cleaning agents, batteries, stationery and fresh and perishable food items etc.
 - Items that may penetrate and contaminate them
- c) Are not to be placed directly on the floor of the trucks or vans, but placed in dedicated predominantly clean pallets or trolleys.
- d) Integrity be reviewed where delivery truck has been involved in an accident.

5. HOSPITAL WARD STORAGE

Note: This guideline apply to Hospital ward / user department storage facilities.

5.1 HANDLING

RECOMMENDATIONS:

Hands are to be regularly washed [refer to appendix a for the recommended hand washing procedure] and dried [utilising the appropriate drying facilities provided] while handling sterile consumables to:

- Prevent contamination and
- Maintain the internal environment of the ward storage area.

5.2 LOCATION

RECOMMENDATIONS:

- 5.2.1 Ward storage should be specifically dedicated for patient supplies only and not located with cleaning materials or food items or adjacent to a hand basin.
- 5.2.2 Sterile and non-sterile consumables may be stored within the one area but kept separated.

5.3 CONTAINERS AND SHELVES

RECOMMENDATIONS:

- 5.3.1 Containers should be made of a non-porous smooth surface material able to

withstand regular washing.

5.3.2 Responsibility for storage bins, containers and shelving should be clearly identified to ensure:

- Regular cleaning of bins
- Sterile consumables rotation
- Regulation of supply quantities [allows identification of slow moving / out of date / damaged sterile consumables.]

5.3.3 Storage shelves and bins should be at a minimum of 250mm from the floor and 440 mm from the ceiling.

5.3.4 Where more than one type of item is kept in one containers, appropriate dividers be utilised.

5.3.5 Inner cartons when used for dispensing in the ward area should be discarded when empty and not refilled.

5.3.6 Outer cartons / shippers are a source of contamination and should not be used for dispensing individual items.

5.4 ENVIRONMENT

RECOMMENDATIONS:

- a] Ward storage areas are to be temperature and humidity controlled to maintain the internal environment.
- b] Windows in the ward storage areas are to be sealed [cannot be opened] and tinted to block direct sunlight on consumable items.
- c] Where possible lighting be flush with the ceiling to prevent accumulation of dust.
- d] The Ward storage area be well ventilated and hold a constant temperature of between 22 degrees to 24 degrees Celsius, with relative humidity between 35% to 68%.
- e] The Temperature in the Ward storage area be regularly monitored and advise sought should temperature ranges falls under and / or exceed the recommended range.

Note: The use of blinds to block the sunlight is discouraged as they collect dust.

5.5 SIGNAGE

RECOMMENDATIONS:

- a] All storage bins and shelves be clearly marked with consumables details.

- b] Signage alerting users of sterile consumables to the necessity of maintaining items integrity are clearly posted.

[E.g. if its been on the floor discard or seek advice]

5.6 CLEANING

RECOMMENDATIONS:

- a] Cleaning of storage bins, shelves, etc should be consistent with the hospital Infection Control Policy [cleaned with warm water and neutral detergent at least once a month and be completely dry before refilling].
- b] Floors be damp mopped or vacuumed [with a filtered vacuum cleaner or ducted system. Dry dusting is not recommended].
- c] Storage areas should be free from vermin.
- d] Aerosol sprays should not be used in the storage area.
- e] Cleaning equipment utilised for the above processes be colour coded according the NSW Health Colour Coding of Cleaning Equipment Circular no 96/55 [Appendix C]

5.7 RESPONSIBILITIES

RECOMMENDATIONS:

5.7.1 Access to Storage Area

Departmental Managers should ensure the area is kept clear of equipment and other objects allowing easy access for cleaning and re-stocking.

5.7.2 Sterile consumables Integrity

Departmental Managers should ensure the integrity of the sterile consumables upon delivery and storage in the ward storage area.

6. GUIDELINES FOR COMMUNITY NURSES

RECOMMENDATIONS:

The following should be considered elements when transporting and storing sterile consumables. [Considered as best practice]

- a) Storage temperature and humidity requirements as stipulated in section 9.4 of AS/NZ S 4187 – 2003
- b) Do not leave sterile consumables in motor vehicles for extended period, e.g. overnight, weekends, as it may affect its integrity.

Guidelines for Storage & Handling of Sterile Consumables

- c) If storage of sterile consumables at home becomes necessary, appropriate containers that maintain product integrity should be used, e.g. impermeable containers with fitted lids, that can be easily cleaned
- d) When transferring sterile consumables from the motor vehicle to the patient's home, use appropriate carry devices that maintain sterile consumables integrity, that can be easily maintained / cleaned.
- e) Never leave sterile consumables where they can be exposed to direct sunlight.
- f) Sterile consumables left in patients home and no longer required must be discarded and not returned to stores.
- g) Vehicles should be maintained in a clean and dry state and in accordance to Area Health Service Vehicle policy
- h) Damaged stock should not be used, i.e. where there are visible sign of loss of integrity [refer to section 9.6]
- i) Work practices and stock control shall enable the segregation of clean and dirty items.
- j) Correct hand hygiene should be maintained
- k) Review and determine appropriate measures to reduce overstocking, wastage and poor stock rotation.
- l) Regular review of best practice should be conducted.

7. GUIDELINES FOR SUPPLIERS

To maintain the integrity of sterile consumables and reduce the incidence of contamination the following elements should be considered:

7.1 DELIVERY BY COMPANY REPRESENTATIVES

RECOMMENDATIONS:

7.1.1 Sterile consumables – the following elements should be considered as part of the delivery process:

- Storage temperature and humidity requirements as stipulated in section 9.4 of AS/NZ S 4187 – 2003
- The use of impermeable containers preferably with fitted lids that can be easily cleaned is recommended NOT handbags, briefcases, etc.
- Avoid excessive exposure to direct sunlight
- Correct hand hygiene should be maintained

7.1.2 Samples - samples presented should be clearly identified as "sample only - not for patient use".

7.2 ENGAGING COURIER SERVICES

RECOMMENDATIONS

Courier companies should be clearly advised of the importance of maintaining integrity of sterile consumables during transport as listed above.

- a] It is recommended that agreements with agencies include the above as Key Performance Indicators.
- b] Suppliers should ensure that courier agencies selected are involved in the achievement of overall best practice.

8. APPENDICES

APPENDIX A- RECOMMENDED HANDWASHING TECHNIQUE



Wet hands and forearms. Use liquid soap and running water

Right palm over left, left over right

Palm to palm fingers interlaced



Back of fingers to opposing fingers interlocked

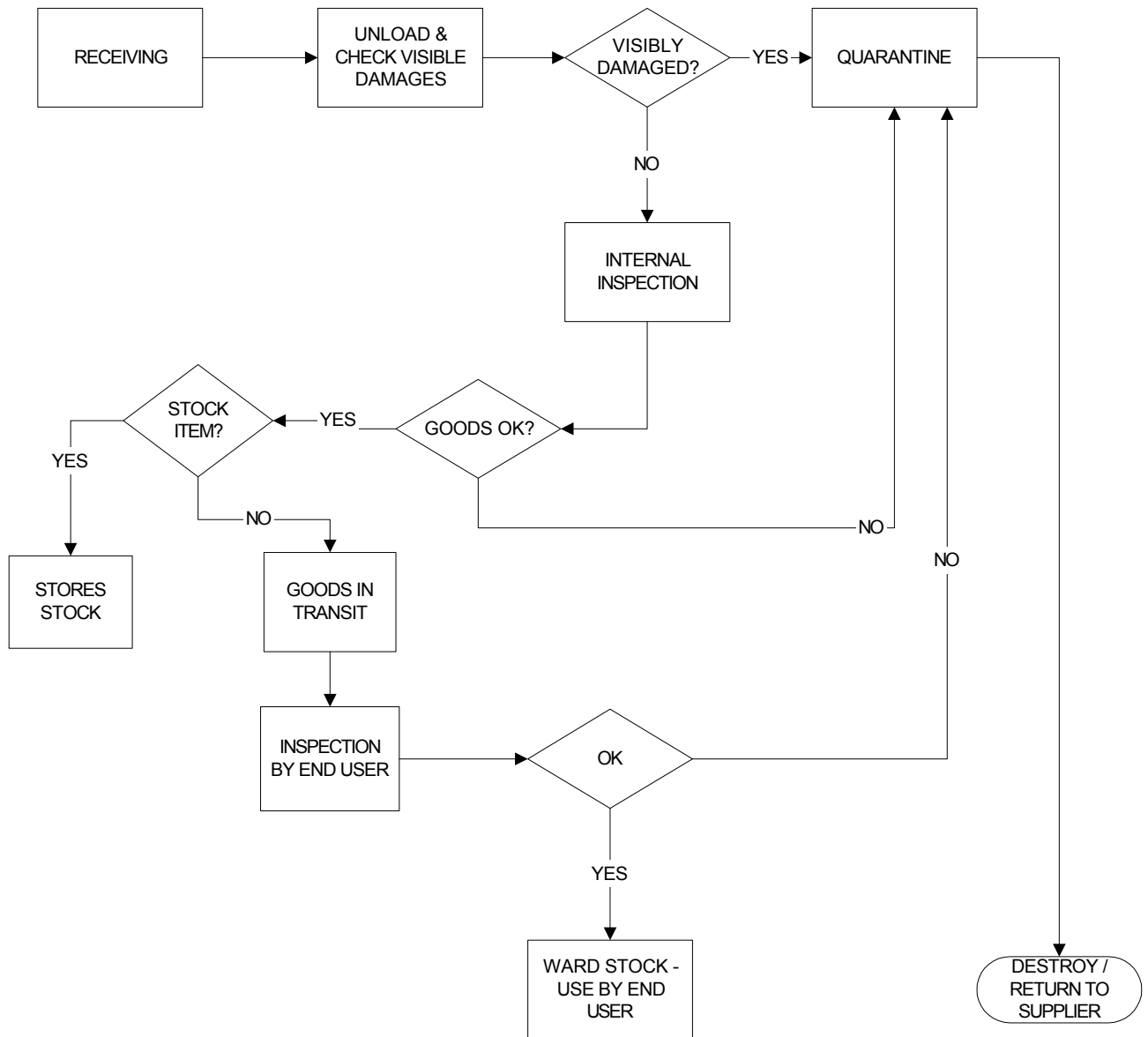
Rotational rubbing of right thumb clasped in left palm and vice versa

Rotational rubbing backwards and forwards with tops of fingers and thumb of right hand in left and vice versa

Notes:

- 1) Continue washing for one minute
- 2) Repeat procedure to the other hand
- 3) Rinse and dry hands thoroughly

Appendix B - Receiving Dock Flowchart



APPENDIX C- COLOUR CODING OF CLEANING EQUIPMENT

Extracted from the NSW Health Department Circular No. 96/55 issued 31 July 1996

The Department of Health in conjunction with various associations and representatives from the health system has been developing Cleaning Standards for Health Facilities. As part of the development of the Cleaning Standards a standard has been introduced for the colour coding of cleaning equipment in all health facilities.

For the purpose of infection and bacterial control the identification of cleaning equipment utilised in the different areas of a health facility is considered essential. Clear identification, by colour coding of various items of cleaning equipment is considered the most effective method of restricting equipment to individual areas of health facilities.

Health facilities are to progressively implement the following colour coding standards:

- | | |
|---|--------|
| • Infectious / isolation Areas | Yellow |
| • Toilets / Bathrooms / Dirty Utility Rooms | Red |
| • Food Service / Preparation Areas | Green |
| • General Cleaning | Blue |
| • Operating Theatres | White |

All items of equipment used in the various abovementioned areas are to be colour coded as indicated. Equipment includes - mops wet, mop handles, buckets, wringer buckets, gloves, and clothes. Any other equipment that it is considered would assist in the control of infection and bacteria, if colour coded should also be included.

APPENDIX D - INFECTION CONTROL - GENERAL

All health care facilities should implement infection cleaning control policies, practices and procedures that incorporate standard (universal) precautions.

Standard (universal) precautions involve the use of protective barriers and practices to protect patients and health care workers from parenteral, mucosal and non-intact skin exposure to blood and body substances, and to minimize the transmission of blood-borne pathogens.

NON-CLINICAL ASPECTS OF INFECTION CONTROL

Cleaning

- Equipment such as cloths, mops and mechanical washing devices should be clean, in working order and should be stored dry between uses. Cloths and mop heads should be laundered each day. Preference should be given to detachable mop heads.
- A neutral detergent is recommended for general cleaning.
- Disinfectants are not recommended for general cleaning.
- Work surfaces should be cleaned regularly. Surfaces should be cleaned immediately soiling or spills occur, or when visibly soiled.
- Terminal cleaning of walls, blinds and curtains is not recommended, unless they are visibly soiled. Regular cleaning should be undertaken as a good housekeeping measure.
- Disinfectant fogging should not be used.
- Carpets should be vacuum cleaned daily.
- Curtains should be changed on a regular basis and as necessary.

APPENDIX E - WASTE MANAGEMENT

The health system is committed to reducing to the minimum level possible the waste generated in the normal course of pursuing a high standard of health care. Where waste generation cannot be avoided, methods must be found to handle, store and dispose of it in the least damaging ways available.

Hospitals should have the following aims with regard to waste minimization and management:

- a] To prevent the generation of waste wherever possible, via:
 - Purchasing policies aimed at reuseables and minimum packaging.
 - Reuse policies aimed at reducing single-use items whenever possible
 - Recycling policies aimed at reducing waste to landfill and similar expensive disposal options, and policies of avoiding, to the extent possible, non-biodegradable, polluting, toxic or hazardous substances
- b] In the context of hospital care and community health care, to identify all items that can be used more than once, that can be recycled, and that will be least harmful to the environment. Wherever possible, items that are not being reused or recycled, or that are not biodegradable should be replaced with more environment friendly items
- c] To encourage the education of all within the workplace in the reuse, recycling and minimum consumption of resources where feasible
- d] To encourage ongoing alertness and staff input to new ideas and strategies for waste prevention or minimization
- e] To promote the frequent periodic review of workplace waste related practices and policies and their impact on the environment
- f] To document and quantify the types of waste generated and disposed of through various methods (recycling, landfill, grease traps, incineration)
- g] To set an example to others in the health and general community in waste management strategies
- h] To introduce waste tracking systems (possible bar-coding) to assist in identification of areas where waste separation could be improved and to assess quantities and costs (numerical profile development and waste auditing)

Hospital cleaning departments have a major responsibility in respect of the achievement of the above aims. Cleaning managers who are generally responsible for waste management in hospitals are in a position to influence waste policies. This responsibility should be in conjunction with the cleaning standards to ensure that there is continuous improvement in waste management.

APPENDIX F - OCCUPATIONAL HEALTH & SAFETY

Occupational health and safety involves two disciplines which combined, are designed to ensure that people at work are provided with employment which maintains quality health and safety standards.

Occupational health is directed to:

- The promotion and maintenance of the highest degree of physical, mental and social well-being of workers in all occupations.
- Ensuring working conditions do not adversely affect workers' health.
- The protection of workers in the workplace from risks resulting from factors adverse to health.
- Ensuring workers are placed in jobs and workplaces suited to their physiological and psychological capabilities.

In summary, the aim of Occupational Health is: "The adaption of work to people and each person to his or her job."

Safety is defined as: "The condition in which persons are protected from the risks of work injury so far as is practicable in the light of current knowledge, through the control of the working environment, work methods, machinery, plant and equipment, and through measures to influence the human factors conducive to accidents."

It is the responsibility of all staff to work towards eliminating workplace hazards and risks.

All employers must meet the following:

TRAINING:

All staff must receive adequate training to be able to safely perform the role asked of them

WORKPLACE INSPECTION:

To ensure a safe working environment is maintained. All managers should conduct regular inspections.

WORKPLACE COMMITTEE:

Each workplace must have an occupational health and safety committee to look at safety concerns in the workplace.

ACCIDENT INVESTIGATION / REPORTING:

All accidents/incidents should be reported and investigated to ensure safe work practices are followed and an ongoing proactive approach is taken to ensure safety in the workplace.

REHABILITATION:

Any staff member injured whilst at work should be afforded the opportunity to return to work as soon as possible under a rehabilitation program to ensure that they can be rehabilitated to pre injury fitness and return to normal duties as soon as possible.

The policy and procedures for the health system are incorporated in the Department of Health "Occupational Health and Safety" Guidelines.

7. SAMPLE DOCUMENTATIONS

Periodic Cleaning / Maintenance of Stores / Warehouse Area

- Floors

- Walls

- Windows

- Ceiling, Vents and Light Fixtures

- Furnishings, Shelves and Rackings

- Washing Facilities [where located]

- General Tidiness

- Odours

- Trolleys and Other Moving Equipment

- Bins and Other Containers

- Trucks

- Regular Monitoring of Storage Area Temperature

Periodic Cleaning / Maintenance of Stores / Warehouse Areas

FLOORS

Clean floors with filtered vacuum and / or damp mop including inaccessible areas, i.e. edges, corners, under pallets and around furniture, equipment and boxes / cartons. Ensure floors are free of dust litter, water or other liquids.

Cleaning completed

| Receiving and Despatch Area | Yes | No | Date Completed | Inspected By | Comments |
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Periodic Cleaning / Maintenance of Stores / Warehouse Areas

WALLS

Clean walls, doors and doorframes with damp cloth. Ensure walls, light switches, doors and door frames are free of dust, lint, scuffs and any other marks caused by furniture, equipment or staff.

Cleaning completed

| Receiving and Despatch Areas | Yes | No | Date Completed | Inspected By | Comments |
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Periodic Cleaning / Maintenance of Stores / Warehouse Areas

WINDOWS

Clean internal surfaces, i.e. glass window frames and ledges. Ensure internal surfaces of glass, window frames and ledges are clear of all dust and grime.

Cleaning completed

| Receiving and Despatch Areas | Yes | No | Date Completed | Inspected By | Comments |
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Periodic Cleaning / Maintenance of Stores / Warehouse Areas

CEILINGS, VENTS AND LIGHT FIXTURES

Clean ceilings, vents and light fixtures. Ensure ceilings, vents, exposed fittings and light fixtures are free of dust and cobwebs.

Cleaning completed

| Receiving and Despatch Areas | Yes | No | Date Completed | Inspected By | Comments |
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Periodic Cleaning / Maintenance of Stores / Warehouse Areas

FURNISHINGS, SHELVES AND RACKINGS

Clean furnishing, shelves and rackings with alcohol impregnated wipes. Ensure furnishings, shelves and racking are free of, stains, soil film, dust, fingerprints and spillages. Ensure furniture legs, wheels, casters, base of shelves and racking stands are free from mop strings, soil and dust.

Check sterile consumables integrity [refer to sections 3.1, 3.2 and 3.7]

Cleaning completed

| Receiving and Despatch Areas | Yes | No | Date Completed | Inspected By | Comments |
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Periodic Cleaning / Maintenance of Stores / Warehouse Areas

WASHING FACILITIES [Where Located]

Clean porcelain and metal surfaces, wall tiles and fixtures and plumbing fixtures with water and neutral detergent. Ensure porcelain and metal surfaces, wall tiles and fixtures and plumbing fixtures are free from mineral deposits and soap build-up. The use of bar soap is not recommended.

Cleaning completed

| Receiving and Despatch Areas | Yes | No | Date Completed | Inspected By | Comments |
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Periodic Cleaning / Maintenance of Stores / Warehouse Areas

GENERAL TIDINESS

Clean areas to ensure maintain their tidiness and uncluttered state. Ensure floor space is clear, only occupied by furniture, equipment and fittings designed to sit on the floor. [No cartons / boxes / stock placed directly into the floor]

Cleaning completed

| Receiving and Despatch Areas | Yes | No | Date Completed | Inspected By | Comments |
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Periodic Cleaning / Maintenance of Stores / Warehouse Areas

ODOURS

Clean the area to ensure it smells fresh and there is no odour, which is distasteful or unpleasant. The use of spray deodorisers is discouraged except in the toilet area. Persistent odours are to be investigated.

Cleaning completed

| Receiving and Despatch Areas | Yes | No | Date Completed | Inspected By | Comments |
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Periodic Cleaning / Maintenance of Stores / Warehouse Areas

TROLLEYS AND OTHER MOVING EQUIPMENT

Maintain cleanliness of trucks, trolleys and other moving equipment. Ensure trucks, trolleys and other moving equipment are free of dust, soil film, cobwebs and other dirt or foreign materials that will be in direct contact with deliveries. [I.e. boxes, cartons and bags]

Cleaning completed

| Trolleys | Yes | No | Date Completed | Inspected By | Comments |
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| Other Moving Equipment | Yes | No | Date Completed | Inspected By | Comments |
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Periodic Cleaning / Maintenance of Stores / Warehouse Areas

BINS AND OTHER CONTAINERS

Maintain the cleanliness of bins and other containers. Ensure bins and other containers are free of dust, soil film and other dirt or foreign materials that will be in direct contact with consumable items. Where possible, cleaning of bins and other containers to be done outside the storage area.

Cleaning completed

| Bins | Yes | No | Date Completed | Inspected By | Comments |
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| Other Containers | Yes | No | Date Completed | Inspected By | Comments |
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Periodic Cleaning / Maintenance of Stores / Warehouse Areas

TRUCKS

External - wash and dry external parts of trucks with water, detergent and dry cloth removing all visible dirt and soil including dirt and soil from tyres.

Internal - clean walls, ceiling and floors [driver and pantec area] utilising vacuum cleaner and damp mop. Clear both areas of unnecessary objects, e.g. empty boxes, plastic wrapping, etc.

Cleaning completed

| External | Yes | No | Date Completed | Inspected By | Comments |
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| Internal | Yes | No | Date Completed | Inspected By | Comments |
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STERILIZING AUDIT ACTION PLAN

| SECTION 9 STORAGE AND HANDLING OF STERILE ITEMS. | RATING | ACTION | REVIEW DATE | BY WHOM | OUTCOME |
|--|--------|--------|-------------|---------|---------|
| <p>General 9.1</p> <p>1. Are sterile items, prepared "in house", stored and handled so as to maintain integrity of packs and prevent contamination?</p> <p>2. Are sterile items from Commercial Suppliers, stored and handled so as to maintain integrity of packs and prevent contamination?</p> | | | | | |
| <p>Storage Areas 9.2</p> <p>1. Are there policies/procedures written for storage and handling of items?</p> <p>2. Are your sterile storage areas:</p> <ul style="list-style-type: none"> ▪ Clearly dedicated to the purpose? ▪ Cleaned to a routine schedule? ▪ Free of dust, insects and vermin? <p>3. Are sterile items stored: -</p> <ul style="list-style-type: none"> ▪ At least 250mm off the floor? ▪ At least 440mm from the ceiling? ▪ Out of direct sunlight? <p>4. Are storage containers kept clean, dry and in good condition?</p> <p>5. Are the walls, floors, ceilings, and work surfaces constructed: -</p> <ul style="list-style-type: none"> ▪ Non-porous and smooth for ease of cleaning? ▪ So that seams are sealed? ▪ So that difficult to clean corners are minimised? | | | | | |

Guidelines for Storage & Handling of Sterile Consumables

| SECTION 9 STORAGE AND HANDLING OF STERILE ITEMS. | RATING | ACTION | REVIEW DATE | BY WHOM | OUTCOME |
|--|--------|--------|----------------|---------|---------|
| 6. Are overhead lights fitted to minimise dust entrapment? | | | | | |
| <u>Movement of Personnel in the Sterile Storage Area 9.2.2</u> 1. Is access to the sterile storage area clearly defined? 2. Is access to the sterile storage area restricted to those listed in Section 9.2.2 (a-d)? 3. Is priority given to the general cleanliness of sterile storage areas? 4. Are Cleaning Materials and equipment dedicated for cleaning the sterile storage area? 5. | | | | | |
| Commercial Items 9.5 1. Are sterile items removed from the outer shipper before bringing them into clean area? 2. Are these items inspected for cleanliness or damage? 3. | | | | | |
| Shelf Life 9.5 1. Is there a system of stock rotation based on the date of sterilisation bearing in mind that shelf life is event related? 2. Are factors listed in 9.6.2 and section 9.6.3 considered when determining the suitability of items for use? | | | | | |

8. REFERENCE LIST

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