Common Mosquito Breeding Places:
Factories & Shipyards

Section B

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Admin Building, Training/Medical Centre & Security/Guard Room

Water Tanks

Floor Under Water Tanks

Causes of mosquito breeding
- Water stagnation on uneven floor due to
  a) rain accumulation
  b) overflows
  c) leakages from pipes

Preventive/remedial measures
- Shield tanks from rain
- Channel overflows away
- Fix leaking pipes
- Apply BTI briquettes periodically

Check For Gaps And Openings At Covers And Ventilation Holes

Causes of mosquito breeding
- Inspection covers not properly closed after maintenance work
- Damaged, corroded or missing covers and cover gaskets
- Ventilation holes not covered or screened

Preventive/remedial measures
- Close inspection covers properly after maintenance
- Repair or replace the covers and cover gaskets
- Install rubber gasket for tank covers to eliminate gaps
- Cover all ventilation holes with anti-mosquito screen

Check For Torn Or Detached Mosquito Nettings

Causes of mosquito breeding
- Anti-mosquito netting for overflow outlets is absent, damaged or not properly installed

Preventive/remedial measures
- Cover all overflow outlets with anti-mosquito netting and replace all damaged nettings
Cooling Towers

**Causes of mosquito breeding**
- Accumulation of water at base of cooling towers

**Preventive/remedial measures**
- Drain out water regularly and flush cooling towers
- Carry out regular cleaning to prevent blockages in discharge points

Reinforced Concrete Flat Roof Including Scupper Drains

**Causes of mosquito breeding**
- Water stagnation due to
  a) uneven floor
  b) clogged drains
  c) poor gradient of drains

**Preventive/remedial measures**
- Re-grade uneven floor
- Carry out regular cleaning to prevent blockages
- Re-grade uneven drains

Roof Gutters

**Causes of mosquito breeding**
- Water stagnation due to
  a) warping of roof gutters, impeding water flow
  b) poor gradient of gutters
  c) roof gutters clogged with leaves or silt
  d) Misalignment of rainwater downpipes with elbow joint, resulting in blockages

**Preventive/remedial measures**
- Remove roof gutters where possible
- Re-grade uneven gutters
- Carry out regular cleaning to prevent blockages
- Apply BTI briquettes periodically
Corridors And Staircase Landings, Including Scupper Drains

Causes of mosquito breeding
- Water stagnation due to
  a) uneven floor
  b) clogged drains
  c) poor gradient of drains

Preventive/remedial measures
- Re-grade uneven floor
- Carry out regular cleaning to prevent blockages
- Re-grade uneven drains

Gully/ Floor Traps

Causes of mosquito breeding
- Water stagnation in gully/ floor traps

Preventive/remedial measures
- Install anti-mosquito valve into traps
- Clear blockages in traps
- Seal up traps that are no longer in use

Flower Pots/ Plates/ Watering Cans/ Plastic Containers/ Domestic Containers

Causes of mosquito breeding
- Water stagnation in flowerpot plates and on hardened soil
- Collection of water in domestic containers and receptacles

Preventive/remedial measures
- Remove flowerpot plates where possible
- Loosen hardened soil regularly
- Empty all water in domestic containers and receptacles
- Store domestic containers and receptacles under shelter, away from rain
**Canopies**

**Causes of mosquito breeding**
- Water stagnation due to
  a) clogged drainage pipes
  b) uneven flooring of canopies

**Preventive/remedial measures**
- Maintain drainage pipes regularly to prevent blockages
- Re-grade floor of concrete canopies
- Apply BTI briquettes periodically

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**Air-Conditioner Drip Trays**

**Causes of mosquito breeding**
- Collection of condensate in aircon drip trays

**Preventive/remedial measures**
- Remove aircon drip trays
- Redirect condensate to bathrooms or toilets

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**Artificial Ponds/ Fountains**

**Causes of mosquito breeding**
- Water stagnation at corner of ponds or fountains that are not circulating
- Collection of water in depressions of fountain features

**Preventive/remedial measures**
- Introduce fish that are natural predators of mosquito larvae into ponds
- Eliminate depressions of fountain features to allow water to flow

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**Discarded Items & Receptacles**

**Causes of mosquito breeding**
- Water stagnation in discarded receptacles

**Preventive/remedial measures**
- Carry out regular cleaning and disposal of unwanted articles
Workshop / Storage Area

Rooftop Including Gutters

Causes of mosquito breeding

- Water stagnation due to
  a) uneven surface of concrete rooftop
  b) poor gradient of gutters
  c) roof gutters clogged with leaves or silt
  d) Misalignment of rainwater downpipes with elbow joint, resulting in blockages

Preventive/remedial measures

- Re-grade uneven gutters and concrete rooftop
- Carry out regular cleaning to prevent blockages
- Apply BTI briquettes periodically

Air-Conditioner Drip Trays

For details, refer to page 91:
Admin Building, Training/ Medical Centre & Security/Guard Room – Air-Conditioner Drip Trays

Equipment And Machineries, Including Canvas Sheets

Causes of mosquito breeding

- Water stagnation in equipment and machinery parts
- Collection of rainwater on undulating surfaces of canvas covers

Preventive/remedial measures

- Apply anti-mosquito oil regularly to parts that may collect water and re-apply after heavy rain
- Avoid using canvas to cover equipment and machineries
Materials And Inventories, Including Canvas Sheets

Causes of mosquito breeding
- Collection of rainwater in materials and inventories
- Collection of rainwater on undulating surfaces of canvas covers

Preventive/remedial measures
- Store materials and inventories under shelter
- Avoid using canvas to cover materials and inventories

Concrete Floor Including Scupper Drains

Causes of mosquito breeding
- Water stagnation due to
  a) uneven floor
  b) clogged drains
  c) poor gradient of drains

Preventive/remedial measures
- Re-grade uneven floor
- Carry out regular cleaning to prevent blockages
- Re-grade uneven drains

Gully/Floor Traps

For details, refer to page 90: Admin Building, Training/ Medical Centre & Security/Guard Room – Gully/Floor Traps
Flower Pots/ Plates/ Watering Cans/ Plastic Containers/ Domestic Containers

For details, refer to page 90:
Admin Building, Training/ Medical Centre & Security/ Guard Room – Flower Pots/ Plates/ Watering Cans/ Plastic Containers/ Domestic Containers

Tyres, Including Discarded Tyres

Causes of mosquito breeding
- Collection of rainwater in inner rim of tyres

Preventive/remedial measures
- Dispose of unwanted tyres
- Store tyres under shelter

Discarded Items & Receptacles

For details, refer to page 91:
Admin Building, Training/ Medical Centre & Security/ Guard Room – Discarded Items & Receptacles
Apron of Building & General Area

Gutters Including Linkway Gutters

Freight Containers

Container And Canvas Roof, Including Secondary Roof

Causes of mosquito breeding
- Water stagnation on and below roofing

Preventive/remedial measures
- Avoid using canvas roof and secondary roofing

Ground Below Containers

Causes of mosquito breeding
- Water stagnation on ground below containers

Preventive/remedial measures
- Apply anti-mosquito oil to ground below containers regularly, and re-apply after heavy rain

For details, refer to page 89: Admin Building, Training/ Medical Centre & Security/ Guard Room – Roof Gutters
Water Storage Tanks, Drums, Containers

Causes of mosquito breeding:
- Collection of water in storage tanks, drums and containers, including water stagnation on covers of the items

Preventive/remedial measures:
- Cover tanks, drums and containers properly and store them under shelter
- Cover all tank outlets with anti-mosquito netting and replace all damaged nettings

Tool Boxes

Causes of mosquito breeding:
- Collection of rainwater in metal and wooden tool boxes

Preventive/remedial measures:
- Empty all water in tool boxes
- Store tool boxes under shelter, away from rain

Flower Pots/ Plates/ Watering Cans/ Plastic Containers/ Domestic Containers

For details, refer to page 90:
Admin Building, Training/ Medical Centre & Security/ Guard Room – Flower Pots/ Plates/ Watering Cans/ Plastic Containers/ Domestic Containers
Bulk Waste Containers, Skips & Refuse Bins

**Causes of mosquito breeding**
- Collection of rainwater in containers, tanks and bins, and on the ground below containers and tanks

**Preventive/remedial measures**
- Clear containers, tanks and bins regularly
- Apply anti-mosquito oil to the ground below containers and tanks regularly, and re-apply after heavy rain

Open And Closed Perimeter Drains

**Causes of mosquito breeding**
- Water stagnation in drains due to
  a) blockages
  b) poor gradient
- Cleaning cannot be carried out properly in covered drains due to concrete slabs/ metal gratings

**Preventive/remedial measures**
- Carry out regular cleaning to prevent blockages
- Re-grade uneven drains
- Remove concrete slabs/ metal gratings permanently to facilitate cleaning
Subterranean Pits & Chambers
Including Key Holes Or Gaps In Covers

Inspection Chambers And Sump Pits

Causes of mosquito breeding
- Collection of rainwater in chambers due to seepage through keyholes or gaps around covers
- Water stagnation in keyholes of covers

Preventive/remedial measures
- Close covers properly after maintenance
- Seal up keyholes and gaps around covers

Stop-Cock Pits

Causes of mosquito breeding
- Refer to above: Inspection Chambers and Sump Pits

Preventive/remedial measures
- Seal up keyholes and gaps around covers

Lightning Conductor Pits

Causes of mosquito breeding
- Collection of rainwater in chambers due to seepage through keyhole or gaps around cover

Preventive/remedial measures
- Fill up pits with sand and seal keyholes
Valve Chambers/ Water Meter Concrete Compartments

Causes of mosquito breeding
- Collection of rainwater in chambers due to blockages

Preventive/remedial measures
- Carry out regular cleaning to prevent blockages

Canvas Sheets

Causes of mosquito breeding
- Collection of rainwater on undulating surfaces of canvas covers

Preventive/remedial measures
- Avoid using canvas sheets

Abandoned Vehicles/ Wheels/ Tyres

Causes of mosquito breeding
- Collection of rainwater in vehicle parts, and in discarded wheels and tyres

Preventive/remedial measures
- Tow away abandoned vehicles
- Dispose of unwanted wheels, tyres and other vehicle parts
Outdoor Hanging And Standing Bins

Causes of mosquito breeding
- Collection of water at base of bins
- Drainage holes at base of bins are clogged

Preventive/remedial measures
- Provide drainage holes at base of bins
- Carry out regular cleaning to clear blockages

Tree Holes, Bifurcation Between Branches, And Thick Leaf Axils
(Fanana Trees, Traveller’s Palm And Any Similar Plants That Can Collect Rainwater)

Causes of mosquito breeding
- Collection of rainwater in tree holes, depressions between branches and thick leaf axils

Preventive/remedial measures
- Seal up all tree holes and depressions permanently with ferns or sand
- Avoid planting of vegetation with thick leaf axils
Ground Puddles/Depressions

Causes of mosquito breeding:
- Collection of rain water in ground puddles or depressions

Preventive/remedial measures:
- Back-fill puddles or depressions permanently

Discarded Items, Receptacles Strewn In Bushes And Flower Beds, Fallen Tree Fronds And Leaves

For details, refer to page 91:
Admin Building, Training/ Medical Centre & Security/ Guard Room – Discarded Item & Receptacles
Toilet & Bathroom

Pails (Including Rims Of Overturned Pails) / Plastic Containers

Causes of mosquito breeding:
- Water stagnation in pails and containers, including in rim of overturned pails

Preventive/remedial measures:
- Empty all water in pails and containers

Toilet Cisterns & Unused Toilet Bowls

Causes of mosquito breeding:
- Stagnation of water in both cisterns and toilet bowls

Preventive/remedial measures:
- Drain out all water in unused cisterns
- Cover and seal unused toilet bowls
- Seal off overflow outlets of cisterns
WC Pan Collars

Causes of mosquito breeding:
- Water stagnation at gap of WC pan collars

Preventive/remedial measures:
- Seal up gap of WC pan collars with cement

Drainholes Of Unused Sinks

Causes of mosquito breeding:
- Water stagnation in drainholes of unused sinks

Preventive/remedial measures:
- Cover and seal unused sinks

Gully/ Floor Traps

For details, refer to page 90:
Admin Building, Training/ Medical Centre & Security/ Guard Room – Gully/ Floor Traps
Canteen/ Eating House

Cooking Pots & Pans / Domestic Containers

Causes of mosquito breeding
- Water stagnation in cooking pots and pans and other domestic containers

Preventive/remedial measures
- Empty all water in containers regularly

Gully / Floor Traps

For details, refer to page 90: Admin Building, Training/ Medical Centre & Security/ Guard Room – Gully/ Floor Traps

Grease Traps

Causes of mosquito breeding
- Water stagnation in grease traps due to blockages

Preventive/remedial measures
- Carry out regular cleaning to prevent blockages
Refrigerator Trays

Causes of mosquito breeding:
- Collection of condensed water in refrigerator trays

Preventive/remedial measures:
- Empty all water in trays regularly

Drip Trays Beneath Dish Racks

Causes of mosquito breeding:
- Collection of water in drip trays beneath dish racks

Preventive/remedial measures:
- Empty all water in trays regularly

Flooring Under Sinks
(May Be Concealed By Cabinets)

Causes of mosquito breeding:
- Water stagnation on flooring below sinks due to leaks from pipes

Preventive/remedial measures:
- Fix pipe leakages
- Apply BTI briquettes periodically

Discarded Items & Receptacles

For details, refer to page 91:
Admin Building, Training/ Medical Centre & Security/
Guard Room – Discarded Items & Receptacles
Ground Carpark

Open And Closed Carpark Drains

For details, refer to page 97:
Apron Of Building & General Area – Open And Closed Perimeter Drains

Carpark Aeration Slabs

**Causes of mosquito breeding**

- Collection of water in hollows of aeration slabs

**Preventive/remedial measures**

- Refill hollows with soil and carry out replanting of grass to prevent soil erosion

Covers For Motorcycles

**Causes of mosquito breeding**

- Collection of rainwater on undulating surfaces of canvas covers

**Preventive/remedial measures**

- Avoid using canvas to cover motorcycles that are left unattended for long periods
Parked Bicycles

Causes of mosquito breeding
- Collection of rainwater in bicycle parts

Preventive/remedial measures
- Store all bicycles under shelter

Discarded Items & Receptacles

For details, refer to page 91:
Admin Building, Training/ Medical Centre & Security/ Guard Room – Discarded Items & Receptacles

Bin Point/ Bin Room

Rooftop Including Gutters

For details, refer to page 92:
Workshop/ Storage Area - Rooftop Including Gutters

Concrete Floor Including Scupper Drains

For details, refer to page 93:
Workshop/ Storage Area - Concrete Floor Including Scupper Drains
**Gully/Floor Traps**

For details, refer to page 90: Admin Building, Training/ Medical Centre & Security/ Guard Room – Gully/Floor Traps

**Stored Bulk Bins**

- **Causes of mosquito breeding**
  - Water stagnation in stored bulk bins due to accumulation of rain
- **Preventive/remedial measures**
  - Shield bins from rain

**Bulky Waste Storage Areas**

- **Causes of mosquito breeding**
  - Collection of rainwater in bulky waste items and on ground below
- **Preventive/remedial measures**
  - Dispose of unwanted articles regularly
  - Store unwanted articles under shelter

**Discarded Items & Receptacles**

For details, refer to page 91: Admin Building, Training/ Medical Centre & Security/ Guard Room – Discarded Items & Receptacles