



PCD 749:2025  
ICS 13.060

## DRAFT ZANZIBAR NATIONAL STANDARD

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**Hygienic Conditions for Manufacture, Handling and Sale Ice for Human Consumption — Code of Practice**

DRAFT FOR STAKEHOLDER'S COMMENT

**ZANZIBAR BUREAU OF STANDARDS**

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## **Foreword**

This Draft Zanzibar National Standard has been prepared by the Water and Soft Drinks Standards Technical Committee (TCFA2). In accordance with the Zanzibar Bureau of Standards general procedures, this draft is hereby presented to the public in order to receive any technical comment concerns

The ZBS was established under Standard Act No. 1 of 2011.

In the preparation of this Standard, the reference was made to the following source:

IS 6969: 2024 Hygienic Conditions for Manufacture, Handling and Sale of Refrigerated Drinking Water and Ice for Human Consumption — Code of Practice; published by Indian Bureau standards.

Acknowledgement is hereby made for the assistance derived from this source.

In reporting the results of a test or analysis made in accordance with this Zanzibar National Standard, the final value, observed or calculated shall be rounded off in accordance with ZNS 94, *Rounding off numerical values*

## **Technical Committee Representatives**

This Draft Zanzibar National Standard was prepared by the Water and Soft Drinks Standards Technical Committee which consists of representatives from the following organizations:

Chief Government Chemist Laboratory Agency (CGCLA)  
Crystal Cave/Sansi Food and Beverage  
Lootah Group of Companies LTD  
Ministry of Health Zanzibar (MoH)  
The State University of Zanzibar (SUZA)  
Zanzibar Food and Drug Agency (ZFDA)  
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# Hygienic Conditions for Manufacture, Handling and Sale of Ice for Human Consumption — Code of Practice

## 1 Scope

This draft Zanzibar National Standard specifies hygienic conditions required for manufacturing, transport, storage, handling and sale of ice used for human consumption.

## 2 Normative references

The following referenced documents are indispensable for the application of this Zanzibar National Standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies;

## 3 Terms and definitions

For the purpose of this Standard, the following (terms and) definitions shall apply:

### 3.1

#### **ice**

a brittle, transparent, crystalline solid obtained by freezing water, compliant to ZNS 57, irrespective of its size and shape and it can be in shaved, cubed or crushed form and meant for human consumption

### 3.2

#### **food grade packaging materials**

material which shall safeguard the hygienic, safety, nutritional, technological, and organoleptic qualities of the product

## 4 General

Any person intending to manufacture, distribute, transport or sale ice for human consumption must seek required licenses under the existing regulations by relevant government authorities, as applicable from time to time.

## 5 Refrigeration

### 5.1 Site and Premises

5.1.1 The building in which the water for making ice, shall be located in a clean and healthy surrounding away from roadside where lot of dust arises due to vehicular traffic, garbage dumps, cattle stables, open sewage drains or places that are likely to breed flies. Premises should not have objectionable odour or smoke. There shall be no accumulation of trash, garbage or similar waste in the vicinity of the plant. There shall be a suitable storage shed or room for water trolleys. Access to site shall be controlled.

5.1.2 The structure of the building shall be of permanent nature and shall be suitable in size, construction and design to facilitate maintenance and hygienic operations, storage of raw materials and other requisites. It shall provide sufficient space for housing of equipment necessary for hygienic operations. The material of construction shall be washable or cleanable and shall be resistant to cleaning system applied.

5.1.3 No portion of the building shall be used for domestic purposes. In case there are other food manufacturing facilities in the same building, a clear physical demarcation between the two should be done to avoid any possibility of cross contamination.

5.1.4 The floors of the rooms should be constructed of concrete or other equally impervious and easily cleanable material. They should be smooth, suitably sloped for drainage of water and provided with trapped drains.

5.1.5 Walls and ceilings of the rooms should have a smooth, non-absorbent light coloured surface, free from crevices and angles to facilitate their efficient cleaning. These shall be painted or lime-washed and cleaned as often as necessary. The junction of the floor with the walls and the junction between the two walls should be rounded to prevent accumulation of dust.

5.1.6 The manufacturing unit shall have adequate lighting and ventilation taking into account the number of workers, their hours of work and nature of operation. Ventilation and adequate lighting should be provided in accordance with Food Safety and Standard (Licensing and Registration) Regulations, Zanzibar Act no.15 of 2013, as amended from time to time. Proper ventilation is essential to prevent condensation and drippage. Exhaust fans shall be provided where necessary. The lighting bulbs or tubes shall have shatter proof covering to avoid contamination from glass pieces in case of accidental breakage

5.1.7 The manufacturing unit shall be made fly-proof, rodent-proof and bird-proof and should be provided with self-closing double doors. The doors and windows should be covered with fly-proof wire gauze, and they shall open outwards.

5.1.8 The rooms and the area surrounding the plant should be kept clean and dust-free.

## **5.2 General Plant Hygiene**

5.2.1 Waste material shall be collected in covered receptacles and shall not be allowed to scatter on the floor of the plant. Suitable facilities for the collection and removal of refuse, floor sweepings and for disposal of wastes should be provided. It shall be disposed of in a manner which is not detrimental to the hygiene of the surroundings of the disposal.

5.2.2 Adequate steps shall be taken to prevent infestation of cockroaches and other household pests. Adequate pest control facility with trained in-house person shall be available or the pest control shall be outsourced for a periodical pest control procedure.

5.2.3 Adequate measures shall be taken to prevent moulds growth on equipment and internal surfaces of processing and storage rooms.

5.2.4 When pesticides are used, care shall be exercised to prevent contamination of equipment and other materials. Under no circumstances shall these be used during processing.

5.2.5 Floors and drains shall be kept clean. In the manufacturing unit, drains shall be provided with detachable covers.

5.2.6 No lavatory, sink, cesspool, or garbage shall be so situated or maintained that odours or fumes therefrom pervade any room where the ice is prepared/stored, water is cooled or filled in trolleys.

5.2.7 Proper places shall be provided for storage of brooms, brushes, buckets and other cleaning gears.

5.2.8 The factory effluents shall not be let off on road or adjacent fields.

5.2.9 Window glass and light fittings shall be maintained clean and dust-free at all times.

5.2.10 There shall be no cobwebs in any part of the unit. Birds and domestic animals shall not be allowed in any part of the unit.

### **5.3 Equipment and Container Cleanliness**

#### **5.3.1 Installation and Construction of Equipment**

The equipment should be constructed and installed in such a manner as to facilitate efficient cleaning and sanitization and easy dismantling and assembling of all the parts that come in contact with water or ice. All the equipment, containers, lids and pipes shall be smooth, impervious and corrosion resistant. All the materials used for construction of those surfaces which come into contact with the ice shall be non-toxic, preferably of stainless steel of designation SS 304 (Austenitic X04 Cr19 Ni9) conforming to.

#### **5.3.2 Cleaning and Sanitization**

All the containers and lids should be cleaned thoroughly with the use of sodium carbonate or sodium bicarbonate or any other suitable detergent solution and sanitized with at least 50 ppm chlorine solution prior to their use. The residual chlorine may be removed by flushing the equipment with water to be made into ice. Food grade cleaning and sanitizer solutions shall be used.

### **5.4 Water Supply**

5.4.1 There shall be an adequate supply of safe and treated potable water (ZNS 57)

5.4.2 Maximum care shall be taken with regard to both chemical and microbiological quality of water that is being used as raw material for ice manufacturing.

5.4.3 For quality tolerances for water used for cooling, ZNS 57 for treated potable water should be referred to as guideline.

5.4.4 The storage tanks for water should, unless completely sealed, be kept covered with tight-fitting lids, examined daily and cleaned properly and sanitized at least once every month. The date of the last cleaning and next cleaning shall be prominently displayed on the storage tank.

5.4.5 Water sample shall be got periodically examined, chemically and microbiologically, as desired by the licensing authority. A record of such examinations shall be maintained.

5.4.6 Running water under pressure shall be easily accessible to all rooms and areas in which water is cooled and equipment are washed.

### **5.5 Employee Hygiene**

5.5.1 Every person employed in the plant shall be medically examined by an authorized registered medical practitioner and the examination shall include X-ray of the chest for tuberculosis, examination of stool for protozoal and helminthic infestation and for any kind of other communicable disease-causing organisms, urine; and blood examination for venereal diseases. Subsequently, the employee shall be medically examined once a year or more frequently, if necessary, to ensure that he/she is medically fit and free from communicable diseases. A record of such examination shall be maintained.

5.5.2 It shall be impressed on all employees that they should notify the medical officer and management cases of fever, vomiting, diarrhoea, typhoid, dysentery, boils, cuts and sores and ulcers (however small), discharging ears and notifiable diseases occurring in their own homes and families.

5.5.3 No worker who is suspected to be suffering from any of the disorders listed in 5.5.2 shall be permitted to work inside the plant. The supervisor shall check the personal hygiene of the workers before the start of work and whenever they enter the refrigeration area after any absence.

5.5.4 Employees shall keep their finger nails short and clean, keep their shaves clean, and wash their hands with liquid soap or detergent and water before commencing work and after each absence, especially after using sanitary conveniences. Hand dryer or clean disposable towels shall be used for drying hand. No worker should allow his hands or any part of his body or clothing to come into contact with the water which is meant for cooling or for making ice. He or she should adopt strict hygienic practices so as to avoid adding any microbial contamination to the water.

5.5.5 In case of an epidemic or as country require all workers shall be vaccinated. A record shall be maintained.

5.5.6 No worker shall be allowed to work without proper clothing and footwear.

5.5.7 Employees shall be provided with clean uniforms (preferably white) or aprons or both and clean washable caps, face masks, gloves, where necessary.

5.5.8 Separate room or place for changing the clothes shall be provided. The clothes shall not be hung in the refrigeration area or processing room.

5.5.9 The uniforms shall not be worn outside the plant but put on just before starting the work and changed when leaving.

5.5.10 Eating, spitting, nose cleaning or the use of tobacco in any form including smoking shall be strictly prohibited within the manufacturing area of the unit. Notices to this effect shall be prominently displayed and enforced.

5.5.11 Sufficient and suitable sanitary conveniences shall be provided, maintained and kept clean in every factory. The conveniences shall be properly lighted. Separate conveniences shall be provided for each gender. The conveniences should have self-closing doors which shall not open directly into any work room in the factory. The conveniences shall always be maintained clean and in good condition.

5.5.12 Sufficient number of toilets and urinals and wash basins, with adequate provision of nail brushes, soap and towels, in the prescribed manner should be provided, conveniently situated and accessible to workers at all times while they are at the plant. The wash basins shall be installed in or alongside the sanitary conveniences with hand free operation faucet controls (for example, elbow, foot or sensor-operated) to prevent direct hand contact.

## **5.6 Quality Control**

Prepared ice shall be periodically checked for the quality parameters such as microbiological and chemical parameters and the records of such testing shall be maintained by the plant staff.

## **6 Transport, Storage and Handling**

6.1 Vendors of ice shall procure the ice only from approved licensed plants.

6.2 All persons handling the ice shall be healthy and free from communicable diseases. They should keep their fingernails short and clean, wear clean clothes and observe strict hygienic practices.

6.3 All vehicles used for transportation of the ice should be so constructed and operated as to give reasonable protection to their contents from access of flies, microorganisms, dust and other contaminants. The vehicles should be maintained clean.

6.4 All premises where ice is stored or sold shall be fully licensed for the purpose by the local health authority. The premises shall be maintained clean and shall be so constructed as to provide reasonable protection to ice from access of flies, dust and other contaminants.

6.5 The Ice shall be stored in clean food grade containers.

**6.6** The ice shall be examined periodically for microbiological hygiene.

## **7 Vendor Hygiene**

The requirements of hygiene of vendors for sale of ice shall be the same as those of the employee hygiene in the manufacturing plant (**see 5.5**). The record of vaccinations of the vendor shall be kept at site.

## **8 Training**

**8.1** Adequate periodical training shall be imparted to all the employees and vendors, preferably by a food safety supervisor. Records of such training shall be maintained in the plant.

**8.2** Hazard analysis and critical control point (HACCP) ZNS 208 programs shall be implemented for prevention of food safety hazards from time to time for all employees and vendors.