Ice…..

the forgotten food

The Ice Industry Code of Practice

This is a voluntary Code of Practice developed by the Packaged Ice Association of Australasia Inc. to be used where Ice is manufactured, stored or handled in any way whatsoever.

The Code of Practice will be enforced throughout the membership of PIAA through its rules and regulations of the Association.
It can be utilised by Regulatory Authorities as a standard in non PIAA member establishments.

The Code of Practice will assist members in fully understanding what is expected when dealing with practices and procedures involving ice. The information in this code forms part of supportive information to the genetic PIAA Food Safety plan for Ice.

Should this code be breached, the PIAA have detailed the mechanism for ensuing compliance with….

- Open and transparent procedures.
- Mechanism for dealing with complaints and contravention of the code.
- A review mechanism.
- Options for referring the matter to the relevant enforcement agency for appropriate action.
- Appeal mechanism.

PIAA will ensure the Code of Practice is widely distributed throughout the food industry where ice is processed or used. PIAA will also endeavour to arrange avenues of training for its members to assist in the practical implementations of this Code of Practice.

The Code of Practice is divided into the following areas:

* Structural/Maintenance.
- Operational/Manufacturing Practices.
- Personal Hygiene/Food Safety Practices.
- Cleaning & Sanitizing.
- Pest Control.
- Records.
- Training.

(A commentary has been provided where further clarification is required. It is displayed in bracketed italics immediately below the appropriate statement and appears similar to this)

Structural / Maintenance

This relates to the main building/s used in the manufacture/storage of ice, its equipment and the building surrounds. This code is read in conjunction but not in contravention of the food safety code within the relevant state.

Ice Machines, Loose Ice Storage, Automatic Handling, Packaging and Packaged Ice, Storage Areas.

- Sound, smooth, impervious and durable surface condition and maintained in good repair.

(Ice machines should be of solid construction with protective coatings and preferably be insulated. All walls and ceilings to the internal compartment of the ice machine should be made of a material which will enable it to be easily kept clean.)

- Fully enclosed and insulated machine area.

(Small ice machines should be located in an enclosed area that conforms with the requirements for the manufacturing and preparation of food.
Large ice machine units not totally enclosed, should be located in a room that complies with the requirements for the production of food.
Totally enclosed large ice machine units should have the associated ice crusher, chutes and augers fully enclosed).

- Protective coatings or non-corrosive material surfaces to be used.
- Easy access to enable servicing of the machines and easy cleaning.
- Located in an area with easily cleanable surfaces and drained to prevent pondage of water/condensate.

(Generally the ice making equipment should be positioned internally within the manufacturing premises. It should be positioned to allow for good air circulation and permit easy access to cleaning).

- Temperature control to maintain ice in the frozen form free from melted water.

(*Location is important to the efficient functioning of ice machines. Ice machines produce considerable heat and thus require good air circulation or water cooling for smooth, efficient operation, keeping power costs to a minimum. The Regulatory Authority should be consulted when selecting the location of ice-making equipment).*

Ice Makers/Ice Crushers/Chutes and Augers.

- Should be fully enclosed against airborne contamination and vermin.
- Maintained in good repair and alignment to prevent contamination by oil, grease or metal shavings.

(Crushing devices and discharge chutes should be made of a material which is smooth, durable and impervious. They should be kept clean and enclosed).

Material contact surfaces and finishes.

- To be sound, durable and impervious and not to contaminate ice.
- Stainless steel recommended.

(Ancillary equipment is all other equipment that may contact the packaged ice including benches, fittings, augers, elevators, pipework and utensils such as ice tubs and scoops should be made of material which is smooth, durable and impervious).

Packaging Area.

- Fully enclosed area to protect against airborne contamination. *(dust , etc.)*

(Packaging areas must not contain non-food grade products).

- Handwashing facilities in close proximity to areas where major work is carried out or cross-contamination can occur for example Packaging Room.

(Handbasin fitted with hot & cold water from a single spout and fitted with automatic sensory device, elbow or foot operated taps are recommended. It should have an adequate supply of soap and disposable towels).

Transport Vehicle.

- Sound, smooth, impervious and durable surface condition and maintained in good repair.
- Insulated or refrigerated to maintain the ice in the frozen form *(below 0° C).*
- Sealed against contamination *(dust, vermin, fumes, etc.).*

Plumbing.

- Toilets, handbasins and change rooms maintained in good repair.
- Plumbing to meet the relevant state codes.

(These are to be kept clean and conveniently located. They are to be properly constructed and ventilated with no direct access to production areas. There will be a potable water supply. Sufficient hot & cold water is to be available. There will be no back siphonage or cross connections and there will be no overhead waste lines in critical areas. Lines are to be kept clear of drips).

Yard, Apron, Loading area.

- Sealed to reduce dust *(Bitumen or concrete recommended).*
- Maintained in a clean state free from unwanted materials.

Main Structures.

- Sound construction to comply with building code.
- Protected against the elements (wind, sun, rain, dust, etc).
- Impervious easily cleaned floor, drained to prevent pondage.
- Maintained in a state of good repair.
  (These shall be easily cleanable and in good repair with no scaling paint. There should be no possibility of condensation contamination).
- Free from harbourages for rats, mice, cockroaches, birds and other vermin.
- Adequate light and ventilation.
  (It shall be adequately illuminated for the work being done and of the protected safety type. Rooms are to be free from odours, smoke and condensation).
- Adequate size to encompass the operation and allow easy assess for cleaning and sanitizing.

Operational / Manufacturing Practices.

- Protect against cross-contamination from foreign matter. (Bait, waste and cleaning materials).
  (the area surrounding ice making equipment should be free from non-food grade materials such as bait, waste and cleaning materials. No bait or non-food grade products shall be stored with ice, in the ice production area or transported with ice to prevent cross contamination. Contents of all containers are to be easily identified and properly labelled to prevent accidental use or contact. Working areas must be kept free from rubbish and litter. Waste containers are to be maintained clean, covered and properly used. Vermin control must be effective and there should be no rodent harbourage. Only authorised pesticides should be used. Pesticide containers must be clearly labelled and stored in a secure storeroom. No birds or animals are to be kept on the premises).

- All food contact surfaces (including scoops, shovels and rakes) continually maintained in a clean and sanitized condition.
  (Ancillary equipment should be cleaned regularly with a cleansing agent, sanitized and allowed to air dry. Steps to prevent recontamination should be taken such as storing an ice scoop in a covered plastic container after use).

- Bags used for the packaging shall be :

  1. Stored in a dry vermin and dust proof enclosure and protected against contamination.
  2. of sound strength and quality to prevent fracture or tearing during handling.
  3. sealed with a tamperproof method (twist ties and plastic clips not acceptable).
  4. restricted from reuse or repackaging.
  5. labelled in an easily identified conspicuous manner with size weight and manufacturers contact details on the package in accordance with state and federal labelling legislation.
  6. bags must bear sequential numbering and use by date.

- Maintain the ice in a frozen state (below 0° C) free from melted water.
- Ice to be decanted into customers bulk bins outside the packaging area unless the bulk bins are in a clean and sanitized condition.
- All water that is used during the manufacturing process shall be sanitized prior to use (including water used to melt fines).
- After any shut down (overnight or longer periods) the water storage sump shall be emptied and adequately flushed prior to recommencement.
- Ice including block ice should meet the NH and MRC Australian drinking water guidelines where used in food or in contact (either directly or indirectly) with food including sealed cans or bottled food or drink.
- Adequate signage to indicate restricted access area. No smoking, handwashing, any suitable health and safety issues.
  (Only authorised personnel are to be permitted in production and packaging areas).

- Ensure the water quality for the production of ice meets the NH & MRC Australian Drinking Water Guidelines. Recommend the use of filtered, activated carbon, sanitizing (ozone or UV light preferred) prior to production.
- Store bags in sealed boxes in a sealed area.
- Restricted access to the public to individually packaged ice for themselves (Hotels, etc.) This may lead to contamination or deliberate tampering.
- Storage and handling of pallets should be in hard stand areas only.
- Temperature control to maintain ice in a frozen state (below 0° C).
- Only food grade lubricants should be used on all ice machinery.
- Waste containers to be provided at appropriate locations, maintained in a clean state and serviced regularly.
  (Working areas must be kept free from rubbish and litter to reduce contamination).

Personal Hygiene / Food Safety.

- Handwashing whenever hands become contaminated in any way whatsoever while processing ice. Drying of hands using
- Disposable paper towels reduce cross contamination.
  (Wash your hands thoroughly with soap and warm/hot water immediately before commencing or resuming work, between tasks and after visiting the toilet, smoking, handling a rubbish container, handkerchief or nasal tissue, performing cleaning duties or after handling fish tubs and bait. Do not wipe your hands on clothing or on anything other than a clean disposable towel).
- Keep clean your personal clothing, hands, fingernails and body at all times.
- Do not make unnecessary contact with ice (do not use bare hands to handle ice).
- When access to loose ice storage/ice packaging areas operators shall be clothed in clean protective clothing (including hair covering/cap, gloves, aprons, boots) to prevent food contamination and use only sanitized equipment.
- Do not spit or smoke.
- Do not work with package ice if you are ill (cold symptoms, vomiting or diarrhoea, skin infections on the hands) or affected with a disease or are a carrier of a disease

that may be transmitted by contamination of food. Notify your supervisor immediately who may direct you to work in a non food area or send you home or to seek medical treatment.

- Do not work in an area where contamination of food may occur if you have a boil, infected wound or sore, or a bandage or dressing that is not waterproof on any part of your body.
- Do not put your hands or fingers in your mouth, nose, hair, eyes, ears or other parts of your body.
- Do not breathe into any package that is to be used for ice.

Cleaning and Sanitizing.

- A cleaning and sanitizing schedule will be developed and implemented. *(Stainless steel will corrode when exposed to certain chemicals such as chlorine compounds. Since chlorine gases and compounds are expelled from water during ice production, stainless steel surfaces should be cleaned periodically with a non-chlorine mild abrasive cleaner. Packaging equipment should be cleaned regularly with a cleaning agent, sanitized and allowed to dry).*
- Only food grade or approved cleaning and sanitizing chemicals will be used.
- Store and use only approved chemicals to prevent cross-contamination.
- Maintain vehicles in a clean and sanitized condition.

Pest Control.

- Use only authorised pest control operators.
- Ensure the premises are serviced at least annually.
- Ensure the chemicals used for pest control are clearly labelled, compatible with ice and approved for food processing.
- Monitoring of premises by staff for signs indicating the presence of pests.

Records.

Records should be kept for the legal required time as dictated by legislation with a recommended minimum of two years. Efficient and accurate record keeping is essential. All records should be reviewed and integrated into a verification process.

- Accreditation standard set by P.I.A.A.
- Control points and critical control points (daily, weekly and monthly monitoring schedules).
- Complaints register.
- Production, stock, sales and delivery records to assist in recall situation.
- Cleaning and sanitizing schedule (including cooling towers for Legionella).
- Maintenance schedule.
- Training of staff.
- Testing of ice and water supply.

- In-house testing (microbiological) minimum monthly, recommended weekly during peak times of production.
- External testing required 4 times per year for microbiological parameters and Legionella in accordance with Standard 1.6.1 and AS 3666 (testing to be done by a NATA accredited laboratory) respectively.

Standard 1.6.1 Australia New Zealand Food Authority (ANZFA 2001)

Packaged Ice.

Interpretation

(1) In this standard:
'Packaged Ice' means ice for human consumption which has been packaged for sale.

(2) 'Packaged Ice' is not a prescribed name.

Microbiology and chemical requirements

When examined by the methods prescribed below of this standard, packaged ice must be free of:

(a) Total coliforms (incl. *E .coli*) per 100ml for in-house testing and in addition
(b) Not have a standard plate count exceeding 100 micro-organisms per millilitre; and
(c) Be free from *Pseudomonas aeruginosa* in 250 ml (when tested externally by a NATA accredited laboratory).
(d) Packaged ice may contain not more than 1.7 mg/l of Fluoride.
(e) Packaged ice must not contain:
Not more than 10 mg/l of nitrate calculated as nitrogen; or
More than 1 mg/l of nitrate calculated as nitrogen.

Methods of Microbiological analysis.

The methods set out in this clause are the prescribed methods with respect to the microbiological examination of packaged ice.
a. *Standard Plate Count*. Proceed in accordance with the current method as described in AS 4276 for Standards for the Examination of Water and Wastewater, 20th Edition, except that for the purposes of this method when 5 sample units of at least 250 ml of packaged ice are examined as detailed, the result shall be reported as 'not exceeding 100 micro-organisms per millilitre' when 5 out of 5 sample units have a standard plate count not exceeding 100 micro-organisms per millilitre.

b. *Coliforms (incl. E. Coli).* Proceed in accordance with the current standard method as described in AS 4276 or Standards for the Examination of Water and Wastewater 20th Edition, except that for the purpose of this method when 5 sample units of at

least 250 ml of packaged ice are examined as detailed the result shall be reported as '*coliforms* not detected' when *coliforms* are not detected in 5 out of 5 sample units.

c. *Pseudomonas aeruginosa*. Proceed in accordance with the current standard method as described in AS4276 or Standards for the Examination of Water and Wastewater 20th Edition, except that for the purpose of this method when 5 sample units of at least 250ml of packaged ice are examined as detailed, the result shall be reported as '*Pseudomonas aeruginosa* not detected' when *Pseudomonas aeruginosa* is not detected in 5 out of 5 sample units.

Education and training.

- Management and staff to undergo food safety education and training to understand the basic principles of food safety and the food safety plan.
  (An appropriately trained workforce is essential in carrying out these practices).
- On commencement of employment, all new staff will undergo induction training in food safety and the requirements of the food safety plan.
  (The manager can provide basic training information in the form of discussions in conjunction with textbooks and videos to ensure the new staff member has an adequate knowledge of food safety to comply with the food safety plan in his/her daily routine).

Issued by the:
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