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# **Damaged Packaging: Prevention and Management**

## **A Guideline for the Seafood Industry**

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**New Zealand Seafood Standards Council**

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## 1. Purpose

Following an industry survey carried out by the NZ Seafood Standards Council, damaged packaging was identified as an issue on a regular basis. This resource aims to clarify the legislative requirements that apply to packaging and to provide guidance on levels of acceptability as well as options for dealing with packed product that has become damaged. It is intended as a guide only.

## 2. Scope

This resource specifically applies to the following:

- Packs of frozen seafood products – generally bulk packs (e.g. 10kg – 20 kg);
- Cardboard cartons;

The principles detailed however, can also be able to be applied to other aspects of seafood packaging, including polybins, retail packs and flexible packaging.

## 3. Regulatory Requirements

### 3.1 Animal Products Regulations

The following regulations are identified as being relevant to operators with respect to packaging:

#### AP Reg 9

All specified persons must ensure that animal material and animal product in their charge is processed in a manner that minimises contamination or deterioration of that material or product.

#### AP Reg 16

All risk management programme operators, operators of animal material depots, and other categories of person specified in specifications for the purposes of this regulation must ensure that any packaging materials (including reusable packaging and inner and outer packaging of any kind) used for animal material, animal product, and associated things are designed, made, stored, and used in a manner that-

- a. maintains the status of the animal material as suitable for use in processing; and
- b. maintains the status of the animal product as fit for its intended purpose; and
- c. minimises contamination of the animal material or animal product.

### 3.2 Human Consumption Specifications

The following specifications provide a definition of packaging, then specific requirements for preventing or minimising the risk of product contamination from the packaging material or from damage.

### HC Spec 3 Interpretation: packaging —

- a. means any material that is intended to protect and that comes into immediate contact with the animal material or animal product; and
- b. includes rigid materials such as cartons and containers where animal material or animal product is filled directly into the carton or container; and
- c. includes any other material contained with, in, or attached to, the animal material or animal product (such as labels, satay sticks, and heat sensors)

### HC Spec 30 Packaging

1. The composition and where appropriate, the conditions of use of packaging must —
  - a. comply with the requirements specified in the current US Code of Federal Regulations, Title 21, Parts 170–199 (21 CFR 170–199), which applies equally to coatings and linings of containers and cartons where these are the direct product contact surface; or
  - b. comply with the requirements specified in the current "Australian Standard for Plastics Materials for Food Contact Use, Australian Standard AS2070–1999"; or
  - c. be determined by the operator to be suitable for use, based on an analysis of hazards and other risk factors from the packaging.
2. If compliance with this specification is achieved through meeting the requirements of subclause (1) (a) or (b), the risk management programme must state the full reference to the regulation, part, section or standard with which the packaging complies.
3. If the packaging is damaged such that suitability for processing of animal material or fitness for intended purpose of animal product may be affected, the product must be:
  - a) handled in a manner that minimises contamination and the damage to the packaging rectified; or
  - b) appropriately disposed of.

*The Australia New Zealand Food Standards Code does not specify details of materials permitted to be added to or used to produce food packaging materials. However the effect of the New Zealand Food Act 1981 Section 9 (4) (c) is that packaging must not cause food to be unsafe or tainted.*

4. Reused and recycled packaging must not be a source of contamination to the animal material or product.

## 3.3 Limited Processing Fishing Vessel Specifications

Also note the following specification for limited processing fishing vessels operating under the Regulated Control Scheme, which is similar but not identical to the requirements in the above HC specs.

### **Spec 36 Packaging**

1. The composition and where appropriate, the conditions of use of packaging must —
  - a. comply with the requirements specified in the current US Code of Federal Regulations, Title 21, Parts 170–199 (21 CFR 170–199), which applies equally to coatings and linings of containers and cartons where these are the direct product contact surface; or
  - b. comply with the requirements specified in the current "Australian Standard for Plastics Materials for Food Contact Use, Australian Standard AS2070–1999"; or
  - c. be determined by the operator to be suitable for use, based on an analysis of hazards and other risk factors from the packaging.
2. If compliance with this specification is achieved through meeting the requirements of subclause (1) (a) or (b), the risk management programme must state the full reference to the regulation, part, section or standard with which the packaging complies.
3. Packaging that comes into contact with fish material and fish product intended for human consumption must be sufficiently wrapped to minimise contamination and kept dry.
4. Packaging must be held in a store or in an area protected from contamination. Only sufficient packaging required for immediate use may be unwrapped, stored or handled in a processing area.

## **3.4 OMARs**

Some OMARs include specific reference to packaging materials. In particular, refer to EU OMAR Section 2.4 Food Contact Materials.

For other markets, check market access requirements on the NZFSA website.

## **3.5 Summary of Legislation Requirements**

Operators must ensure that:

- Packaging material is protected from contamination during handling and storage; and
- Packaging effectively protects product from contamination during the handling, transporting and storage.
- Packaging is not a source of contamination to the product.

## **4. Causes of Packaging Damage**

### **4.1 Poor Quality Packaging**

Use of poor quality packaging materials that are not suitable to withstand the range of conditions that they will be exposed to during storage and use is a primary cause of damage

that may arise once product has been put inside. Selection of appropriate packaging materials should ideally take into account some or all of the following factors:

- How strong does your packaging need to be?
- What weight of product will it hold?
- What dimensions will the pack be?
- What closing/sealing method will be used (strapping, tape, etc)?
- Can it withstand getting wet?
- Can it withstand the environment that it will be exposed to?
- Can it tolerate multiple handling?
- Will it go through machinery?
- What type of stacking will be used?
- Will there be any outer pallet wrapping or other protection?
- What type of material will be used (i.e. corrugated cardboard, foil board, etc)
- Can the material be printed on, will labels stick when applied?

It is recommended that you contact your packaging supplier for detailed information on the type of packaging that will best suit the product and storage/handling conditions of that product.



This picture shows a considerable amount of damage to practically all cartons indicating that the packaging material is too light for the product it holds and the handling it has to undergo.

This type of damage, where product is not exposed, can be repaired by use of sealing tape, providing it does not hide the labelling.

## 4.2 Incorrect storage conditions

Storage areas for packaging must not be a source of contamination or cause damage to the materials. This can occur in the following situations:

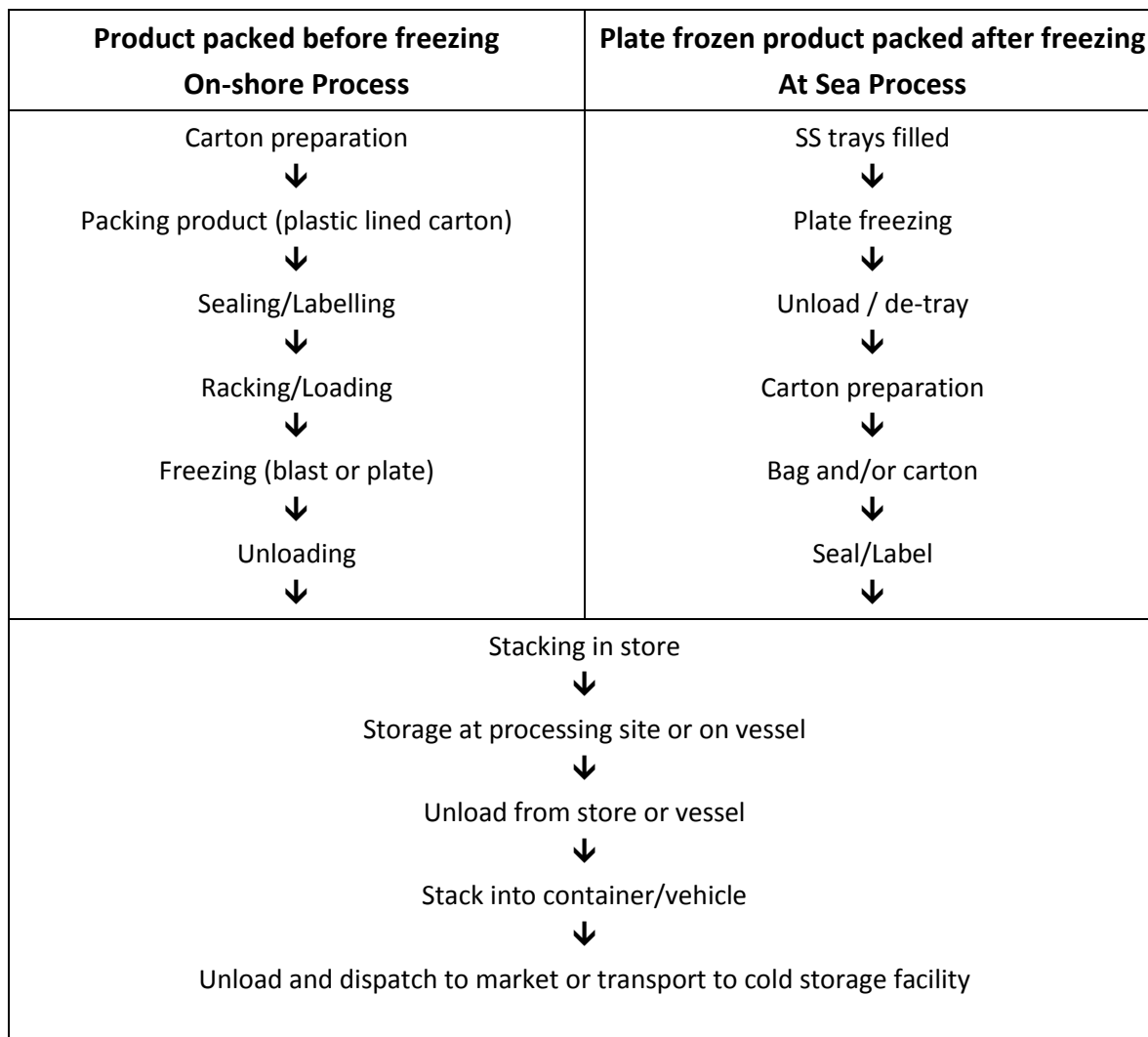
- a. Inadequate protection of exposed packaging, where there is a risk of the materials getting dusty, dirty and/or contaminated;
- b. Poor stacking, which can result in damage to the packaging from falling or squashing;
- c. Wet conditions, which can be caused by high humidity or dampness, even condensation, in the storage room; or inappropriate use of water during cleaning can easily result in loss of integrity and strength even if the packaging is dried out.
- d. Shared storage areas, where packaging may be in the same room as other materials such as chemicals, ingredients, equipment, etc may result in cross contamination unless there are clearly defined areas for each material.
- e. Temporary holding of cartons in non-storage areas such as fishing decks, processing areas, dockways, etc, can result in significant damage or contamination and requires managing so that any time in temporary storage is minimised.

In factories and vessels operating under a risk management programme or regulated control scheme, control of the above factors should be managed by the documented systems, activities, monitoring and review relating to the storage of packaging.



### 4.3 Rough handling

The following flow charts provide examples of the normal movement of frozen seafood product as it is packed and frozen. At several of the steps, the potential for damage to the packaging material (and product) exists due to incorrect or inappropriate (rough) handling.



Control and prevention of rough handling is primarily through effective and on-going training, clear instructions and an understanding by staff of the potential consequences of their actions.

### 4.4 Use of Wrong Size Cartons

Damage can occur in situations where the correct packaging is no longer available (for example during a fishing voyage), and packaging is used that is either too small or too big.

Operators should ensure that fish product which is packed into the wrong sized cartons is repacked as soon as possible once correct packaging is obtained.

## 5. What to Do with Damaged Packs

Options for handling damaged cartons will depend on the following factors:

- At what stage in the process the damage is detected
- Extent of the damage
- Destination of the product

Note:

The regulatory requirements state:

“If the packaging is damaged such that suitability for processing of animal material or fitness for intended purpose of animal product may be affected, the product must be:

- a) handled in a manner that minimises contamination and the damage to the packaging rectified; or
- b) appropriately disposed of.

There may be situations where packaging repair/replacement is not necessary, such as the case of minor damage, where the integrity of the package has been maintained and there is no risk of contamination to the product.

### 5.1 Possible Actions

#### 5.1.1 *Repair the Damage*

Some damage will be able to be repaired or patched. This may be possible under the following circumstances:

- Damage is minimal
- No exposed product
- Repaired pack will still meet legislation and market access requirements

Repairs should only be made with materials that are suitable for the purpose and will remain intact during further handling, transport and storage. For example, sealing tape must be able to tolerate frozen temperatures.

Note:

Any sealing tape or other repair material must not hide or cover product labelling information.



These examples show damaged cartons being repaired or re-sealed with tape.



In some cases, for example where product is for further processing in New Zealand, an acceptable solution for damaged packaging is to wrap a pallet of cartons (some or all of which may be damaged) with plastic wrap. This not only seals any damaged cartons but also provides additional protection for product as it moves further through the distribution chain.

Wrapping is also a useful means of securing and isolating a collection of damaged cartons that are waiting for transfer back to processing premises for repacking.

**Wrapping damaged cartons with pallet wrap is not acceptable for product that is for direct export.**



### **5.1.2 Re-Pack Product**

Where damaged packs cannot easily be repaired, the product may be able to be repacked. However, repacking can only be carried out in areas specifically designated and suited for this.

Inside a freezer store or in load-in/load-out areas are generally not suitable. However, **if there is no exposed product**, repacking can be carried out in a storage area, providing the following is met:

- Enclosed “room” with doors to the outside closed (“room” could include an ELA where suitable);
- Suitable packing table, able to be cleaned and sanitised before and after use;
- Product is entirely enclosed in plastic packaging (i.e. no exposure to the air) once the damaged outer carton is removed;
- Correct packaging and labels are available;
- Repacking is carried out by suitably trained people who have followed appropriate hygiene procedures;
- There is no other risk of contamination;
- The damaged packaging material is removed from the area and disposed of.
- Product found to be exposed after removal of the outer carton is separated and sent to an area that has facilities suitable for handling exposed product (see below).

Storage facilities that need to carry out the above repacking procedure from time to time should ensure that it is documented as part of the risk management programme.

This change to a risk management programme would be considered to be a “minor amendment” and would not need to be re-registered with NZFSA.

### **5.1.3 Return of Exposed Product to Owner or Processor**

In some situations, where product has been transported away from the processing site for storage, damaged product may need to be returned to the processor for rework or trimming and repacking. The product may also be transferred to any other facility that has facilities suitable for handling exposed product (i.e. processing area).

This may occur where:

- Product is exposed (inner plastic packaging damaged as well as outer carton).

Where product is exposed, repacking will need to be carried out in a processing area. (See below for details of repacking procedure.)

- Damage is too great to repair;
- Facilities and/or materials for repacking are not available;

- The risk management programme at the storage site does not allow for repacking.

Any exposed product must be covered with plastic or other suitable material before being moved.



If the damage to the packaging means that the product is exposed, the packaging must be removed, the exposed product trimmed, and packaging replaced. This must be carried out in a suitable processing area.

### Flow Chart – Repacking Exposed Product

Damaged Packs Received  ↓	Place in cold storage until ready to re-process. Ensure it is separated from other product in the store and clearly labelled.
Remove from Storage and Unwrap  ↓	All damaged packaging and liners to waste.
Trim Exposed Areas of the Product (and any other contamination)  ↓	If possible, this should be done while the product is still frozen to avoid the need for thawing. Care is needed with knife handling when cutting frozen product.
Repack Product into Liners and Cartons  ↓	Suitable cartons to be used (may need to be supplied by the product owner).
Label  ↓	Correct labelling to be applied according to the requirements of the product owner and RMP requirements. Product to be labelled with the original packed date.
Store  ↓	Unless that product has been thawed to a major degree during the repacking, repacked product can be returned to the cool store.  If required, blast freeze product to -18°C.
Dispatch	Confirm all details of labels and product temperature at dispatch.

#### Note:

Re-packed product is not considered to be re-processed and therefore the packaging is to be labelled with the same date labelling (e.g. fishing trip date, packed/production dates), that was on the original package.

#### 5.1.4 *Dispose of the Product*

Where damage has resulted in contamination of the product contained within the packs, a decision needs to be made as to whether disposal of the product is required. Operators with risk management programmes should deal with this type of situation according to their procedures for managing unforeseen circumstances. This may involve seeking specialist advice.

## 5.2 Actions for Damaged Product from Vessels

The most common source of damaged packaging is with product processed at sea. There are a number of possible reasons for this:

- Continual movement of the vessel from sea conditions – sometimes extreme;
- Bulk stacking of product in vessel holds – no racking;
- Crew walking on packed cartons during stacking;
- Incorrect storage of packaging materials (e.g. on deck);
- Incorrect carton size for frozen fish block (may occur if they run out);
- Poor quality cartons;
- Multiple handling during a voyage and at unloading.

So, although a vessel operator may attempt to ensure that product does not become damaged during voyages, the conditions may not always result in this being possible.

Processed at-sea product with damaged packaging arriving at a storage facility directly from a vessel cannot generally be returned to the processor for repackaging. Either the vessel has already departed, or it is not practical to return the product to the vessel for repacking. During un-loading from the vessel, it is recommended, where possible that damaged product is isolated and repaired on-board before being discharged.

Shore based vessel managers should work with the storage facilities to assess the product and determine what action should be taken to address any damaged product. Where possible, repair of the damage or repacking of the product should be carried out as soon as possible.

Any packs with exposed product should be covered and arrangements made by the product owner for repacking (or processing) to be carried out at a premise with facilities suitable for handling exposed product.

## 6. Damaged Packaging Procedure

It is recommended that a documented procedure is developed for management of damaged packaging. This would include some or all of the following sections:

- a. Identification of affected product;
  - At reception – damaged product entering the store;
  - In store – as a result of damage in the store itself (such as forklift damage, damage from falls, etc)
  - At load-out, where damage has not been detected beforehand.
- b. Recording details of affected product including -

- Name of product/Species
  - Pack date(s)/Lot Identification
  - Processor details (where product is not located at processing site)
  - Vessel name/ID number
  - Details of damage
- c. Notify the product owner where the processing has not occurred on site and confirm action to be taken. Get correct packaging and labels if required for repacking.
- d. Where action is not to be taken immediately, separate product and ensure it is labelled as “On Hold”;
- e. Decide what action will be taken – see above (wrap, repack, return, dispose);
- f. Document action, reason and time frame for completion;
- g. Sign off when completed satisfactorily.

As with all procedures operating under a risk management programme or operator documented system (for Limited Processing Fishing Vessels), it is important to assign the responsibility for carrying out these procedures to a particular person or people. Records should be held for audit purposes as required.

For further requirements relevant to packaging fish or fish products, refer to the Seafood Code of Practice (available from the NZFSA website: [www.nzfsa.govt.nz](http://www.nzfsa.govt.nz))