Transportation and storage

For licensed meat facilities

Legislative requirements

"Appropriate" storage and transportation conditions for edible and inedible products, ingredients, and packaging materials, are required in many clauses of the Meat Inspection Regulation (MIR) and the Meat Facility Standards (MFS), but what exactly does that mean? Let us explore how you can meet these outcome-based requirements to protect your food products and as a result, your customers.

Loading, arranging, and unloading food carriers

Meat Facility Standards - B1 Transportation

B1.1 Food Carriers

a. Carriers are loaded, arranged, and unloaded in a manner that prevents damage to or cross-contamination of meat products.

b. Finished products are transported under conditions that prevent cross-contamination, spoilage, or damage.

Loading and unloading practices influence the safety of the items inside the carriers. For example, if incoming packaging materials are loaded beside containers of chemicals inside a delivery truck, the jostling during transport can spill the chemicals on to the packaging materials, making them unsafe to use. Or, if covered or wrapped items are unstable during transport, they could become unwrapped and contaminated by the vehicle floor or by other sources of contamination.

Before unloading transport vehicles, a good practice is to check that all incoming product is in good condition and has not been contaminated during transport.

- Inspect the carrier and the load for cleanliness and evidence of pests.
- Look for signs of tampering or damage such as broken seals or unusual appearance.
- If contamination is found during unloading, stop the unloading immediately to avoid bringing the contamination into the facility.

To help workers, develop a policy or protocol for them to follow if an unacceptable load arrives. This tells them what is acceptable/unacceptable for receiving and the steps to follow for rejected loads.

Proper transportation conditions include temperature controls to maintain perishable fresh product temperature at less than 4ºC (40ºF) for refrigerated product and less than -18ºC (0ºF) for frozen product. Check the temperature of incoming refrigerated and frozen products to ensure they meets requirements. If product is too warm or you think temperatures have been compromised during shipment, do not accept the load.

The same approach is used when loading carriers for delivery by your company or a third party. These good practices will help to protect products during transport:

- Wrap or package products in totes, boxes, or other types of packaging material.
- Check the temperature of perishable products (fresh or frozen) upon loading.
- Check the cleanliness of the carrier and verify there is nothing in the carrier incompatible with food (e.g., fertilizers, cleaning chemicals). If a prior load contained incompatible items, a thorough cleaning between loads is recommended.
- Protect products from direct contact with the vehicle floor or pallets.

If your company is delivering your products, double check that everything is in good condition upon arrival at the destination.

- Measure and document the temperature of the products at arrival using an acceptable temperature measuring device such as a thermometer or data logger.
- Obtain a signature of the receiver on the delivery form indicating that the products were received in good condition.

If a third party is used for transportation of your products or if products are picked up by a customer, the custody and control of the product is lost once it is loaded. Implement these practices to assist in continued product protection during transport:

- Obtain a signature of the customer or delivery company, indicating the load is acceptable to them. Include the time it was delivered.
- Supervise or spot check the loading practices of your products by the third party.
- Include safe handling instructions of the products to be used upon arrival.

Receiving and Storage

Meat Facility Standards – B2 Receiving and Storage

B2.1 Perishable Product Receiving and Storage

a. Incoming perishable ingredients and perishable products are moved into refrigerated storage promptly after arrival.

b. Perishable products are stored under conditions appropriate for the product. Temperature records are kept to ensure product temperatures are maintained.

c. All products (e.g., food, ingredients, packaging materials) are stored and maintained under conditions to prevent deterioration, damage, spoilage, and cross-contamination.

Temperature

Microorganisms affecting the safety and quality of food grow quickly at temperatures above 4ºC (40ºF) and it is important to minimize the amount of time that temperature-sensitive foods, like meat, are exposed to warmer temperatures. Upon arrival of refrigerated foods, move them to coolers or freezers straightaway.

- To keep product temperatures at 4ºC (40ºF) or less, the cooler should be set slightly lower, ideally closer to freezing (1-3ºC / 34-37ºF) and have good air flow to prevent the formation of warm air pockets.
- Set freezers lower than -18ºC (0ºF) to ensure frozen product remains in a completely frozen state and is not subject to partial or repeated thawing and refreezing.
- Implement a protocol to check the temperature of products regularly to be sure foods maintain proper temperatures throughout storage.
- Check storage temperatures regularly to ensure coolers and freezers are working well. This can be done using a calibrated thermometer or installing temperature gauges.
- Record the temperature check at a regular frequency to demonstrate that the cold chain is maintained and refrigerated products are not exposed to significant temperature fluctuations.
- Where temperature readings are above required temperatures, confirm whether the deviation is related to a defrost cycle or an indication of a cooler or freezer problem.

Rotation

Implement a protocol that enables proper rotation and use of ingredients.

- Prevent pushing older products to the back of the shelf or to the back of the cooler.
- Use a first-in, first-out as a reliable approach to using ingredients in a timely manner.
- Products showing signs of freezer burn or ice buildup should be prioritized for sale or discarded.
- Ingredients close to their expiration date should be used first, expired ingredients should be evaluated and either identified for use by a certain date or discarded.

Spoilage

- Products stored in coolers, such as final or dry-aged products, should be monitored for mould growth, sliminess, off-color, unusual odor, or any other indications that the product is deteriorating.
- Take prompt action to remove the unwholesome condition or discard affected product to ensure it does not become a risk to fresh and unspoiled products.

Organization and storage

- Organize coolers and freezers to keep like-products stored together.
- Store raw meat away from cooked products.
- Completely separate inspected meat from uninspected meat.
- Clearly identify allergen-controlled products and store them in designated (e.g., labelled) areas, ideally on lower shelving to eliminate the risk of spillage into non-allergen items stored below.
- Store all opened bulk food packages in approved containers with tight fitting lids and labelled with contents and the date opened.
- Cover exposed or opened product that is susceptible to contamination or drying out.
- Store products on clean pallets or shelving with enough space to provide airflow between products. Allow enough space around shelving for access to and servicing of pest control traps and sanitation procedures, typically 15 cm (6") off the floor and 30 cm (12") away from the walls.
- Avoid storing items in coolers and freezers that are not a part of the processing operation such as equipment or ingredients that are not being used anymore. This causes clutter, could introduce contamination risks, and interferes with ease of sanitation.

Cleaning

- Determine an appropriate cleaning schedule for coolers and freezers to ensure they are cleaned at an assigned frequency.
- Coolers and freezers should be free of excessive dust, or ice buildup and odors.
- Perform an additional cleaning whenever this is observed in between the assigned frequency.

Wild game and uninspected carcasses

- Wild game hides are a well-known source of mould and bacterial contamination which is why some operators refuse to accept them at their facility. If you do choose to process wild game and uninspected carcasses, they are to be received already eviscerated with the head and feet removed prior to arrival.
- If processing uninspected or wild game carcasses, process them at the end of the shift after inspected meat has been processed and safely stored.
- Communicate to your customers that temperature-abused or heavily contaminated carcasses are not accepted.

Meat Facility Standards – B2 Receiving and Storage

B2.2 Chemicals Receiving and Storage

b. Chemicals are received and stored in an area and manner that does not cause cross-contamination of food, food ingredients, food contact surfaces, or packaging materials.

Chemicals for industrial use are often concentrated and a small amount consumed through contaminated product can cause harm. Therefore, chemicals must be well sealed during storage and transport throughout the facility.

- Chemical receiving and movement to storage areas can be controlled by dedicating a receiving area to chemicals that is separate from production rooms or by dedicating a specific time that chemicals can be transported through the facility.
- Designate a chemical storage area close to the receiving area and promptly put the chemicals away in that space to eliminate the exposure of chemicals to the food products at receiving and storage.
- If it is not possible to move chemicals to a dedicated area without passing through the processing area, keep the chemicals in the receiving area until production is over and all food products have been put away, and then move them when it is safe to do so.
- Maintain appropriate labelling of chemicals throughout the facility, keeping them in their original packaging whenever possible. If chemicals are decanted and diluted, label the bottle with the dilution concentration.
- Separate chemicals in storage based on their chemical properties (e.g., acid and bases) to prevent chemicals from becoming accidentally mixed. Certain chemical reactions can cause deadly fumes, fire, or explosion.

Meat Facility Standards – B2 Receiving and Storage
B2.3 Inedible products and waste are handled, stored, and removed in a manner that minimizes cross contamination risk (e.g. no build up in processing areas, storage or working areas).

Meat slaughter and processing operations, by their nature, generate inedible materials and waste. This can range from the trimmings and bones after processing operations are complete, to inedible products such as removed abscesses, intestines, hides, and hooves. Diligence in removing inedible parts is critical to avoiding cross contamination to clean edible parts.

- Remove inedible products away from carcasses and edible products as quickly as possible since they typically carry bacterial or other sources of contamination.
- Inedible products should be stored in designated bins or areas until they can be disposed of permanently.
- If using bins, a system that clearly communicates "inedible material", such as labels or color coding, clearly distinguishes between edible and inedible meat products. These visual identifications can be effective in reminding workers to be cautious of cross-contamination risks.
- The inedible material bins should be leak-proof and covered to effectively contain the contents when transporting them to disposal areas.
- Designated bins are useful on both the kill floor and in the processing area. It is particularly important to distinguish between edible and inedible bins in the processing area because more bins are generally used in processing.
- It is important to remove inedible products frequently to avoid build up and affecting worker safety.
- There should be no storage of any edible products in the inedible storage areas.
- Worker traffic back and forth from the inedible storage areas should be limited and hygiene practices are required when accessing these areas to ensure workers are not transferring contamination on their person from these areas to cleaner areas.