



BSI Standards Publication

**Indirect, temperature-controlled refrigerated
delivery services — Land transport of
parcels with intermediate transfer**

National foreword

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**Indirect, temperature-controlled
refrigerated delivery services —
Land transport of parcels with
intermediate transfer**

*Services de livraison frigorifiques indirects sous température
dirigée — Transport terrestre de colis comprenant un
transbordement*



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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

This document was prepared by Project Committee ISO/PC 315, *Indirect, temperature-controlled refrigerated delivery services — land transport of parcels with intermediate transfer*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

0.1 Why develop this document?

In recent years there has been a growth in temperature-controlled refrigerated delivery services in response to the growing need to deliver temperature-sensitive goods in the form of chilled parcels and frozen parcels. Such temperature-controlled refrigerated delivery services have been modelled on typical postal and distribution services to support the development of e-commerce.

These specific types of temperature-controlled refrigerated delivery services can contribute to the ability of local food producers to expand their businesses and increase their sales channels.

Temperature-controlled refrigerated delivery services can provide an affordable option to send chilled parcels and frozen parcels without the need to add cooling materials inside them. As a result of the global trend towards more online trading for food industries, a number of countries have started to implement temperature-controlled refrigerated delivery services of this nature.

There is an expectation for further growth of refrigerated delivery services across more countries. Therefore, there is a recognised need for the refrigerated delivery services to develop industry standards and good practice in this area. However, because of the temperature sensitivity of the transported goods and the specific rules for food safety, there is a need to recognise a lack in existing food safety or refrigerated transport standards to cover the specificities of this new activity.

0.2 What are the aims of this document?

This document sets out the requirements for refrigerated delivery service providers in order to improve the quality and consistency of their refrigerated delivery services for both receiving refrigerated parcels and sending them through the refrigerated delivery service.

In addition, this document aims to be a guideline for refrigerated delivery service providers to support consumer safety through a total control of the cold chain while the refrigerated parcel is in the possession of the refrigerated delivery service provider.

The information that the refrigerated delivery service provider is required to give the delivery service user through this document (see [Clause 4](#)) could help the delivery service user to make a more informed choice when selecting a temperature-controlled refrigerated delivery service and could improve overall consumer trust in using such refrigerated delivery services.

0.3 Which service does this document target?

Refrigerated delivery service users may choose service temperature ranges from among refrigerated services offers that are suitable for their shipments. The requirements within this document focus on the service provided by, and the processes for, temperature control within the refrigerated delivery service offered. The exact temperature ranges of the refrigerated delivery service offered and the terms and conditions for the different temperature range of refrigerated transported parcels are decided by the refrigerated delivery service provider. Temperatures, terms and conditions may differ depending on the country within which the refrigerated delivery service is operating and therefore are not covered.

The scope of this document covers the carriage of individual parcels by refrigerated delivery services and the temperature of the goods can be associated with the temperature of the parcel's environment. This document's requirements focus on the temperature control of the service, rather than the temperature of the goods themselves. Therefore, it is not necessary to open each refrigerated parcel to monitor the temperature of the goods.

Certain refrigerated delivery services might need to apply some additional requirements that fall outside of this document (these might include temperature measuring of the refrigerated parcels themselves – see also 0.4) but in such instances it is the responsibility of the refrigerated delivery service provider to find out what these are and implement them as appropriate.

0.4 How does this document affect refrigerated delivery service providers specifically providing indirect refrigerated delivery services for food?

Some products might fall under local legislation, therefore attention is drawn to the need for refrigerated delivery service providers to be aware of relevant rules and requirements (for example, food safety). It is important to note that this document covers refrigerated delivery services of refrigerated goods which are not specific, or exclusive for food products. However, in this case the absence of cross-contamination should be verified as soon as other refrigerated goods are loaded alongside food within the refrigerated delivery service provider network.

It is also acknowledged that different countries might also have different legal definitions for either refrigerated delivery services or for the transport of food in terms of transport conditions and/or the temperature or type of chilled and frozen food or food products. Precise temperatures for chilled and frozen transport have not been defined within its requirements, and, where applicable, attention has been drawn to the need to refer to any relevant legislation.

Where a refrigerated delivery service provider is specifically providing indirect refrigerated delivery services for temperature-sensitive or refrigerated food, relevant government departments, trade associations and professional bodies within the country of business can often be consulted to provide advice, guidance and particular requirements regarding the operation of indirect refrigerated delivery services for food within that particular jurisdiction. Perishable foodstuffs can be a particularly sensitive area, and it might be useful to consult a document such as the United Nations ATP publication, the Agreement on the International Carriage of Perishable Foodstuffs and on the Special Equipment to be Used for such Carriage^[8], which has been developed and adopted by a number of countries, for further guidance and/or applicability for such specialist temperature-controlled refrigerated delivery services. The Codex Alimentarius (the “Food Code”), which was established by the Food and Agriculture Organization of the United Nations (FAO) and the World Health Organization (WHO) might also provide relevant international standards regarding food.

Indirect, temperature-controlled refrigerated delivery services — Land transport of parcels with intermediate transfer

1 Scope

This document specifies requirements for the provision and operation of indirect, temperature-controlled refrigerated delivery services for refrigerated parcels which contain temperature-sensitive goods (including foods) in land transportation. It includes all refrigerated delivery service stages from acceptance (receipt) of a chilled or frozen parcel from the delivery service user to its delivery at the designated destination, including intermediate transfer of the refrigerated parcels between refrigerated vehicles or container and via a geographical routing system. This document also includes requirements for resources, operations and communications to delivery service users. It is intended for application by refrigerated delivery service providers.

This document does not cover requirements for:

- a) refrigerated parcel delivery via modes of transport such as airplane, ship or train;
- b) refrigerated parcels that are transported in ambient temperatures due to the fact that they contain their own refrigeration materials (for example, ice packs, refrigerated foam bricks, dry ice blocks) and are surrounded and enclosed by sealed thermo protective packaging that creates a separate refrigerated climate to that provided within the delivery service. However, these types of refrigerated parcels may be transported through a refrigerated delivery service;
- c) direct refrigerated delivery services in which chilled parcels and frozen parcels are collected from the delivery service user and transported directly to a recipient without in-transit transfer;
- d) the quality or the measurement of the temperature of the contents of the chilled parcels or frozen parcels being delivered and their pre-point of receipt state, however it does set the requirements for the refrigerated delivery service carrying them;
- e) Medical devices and medical equipment and pharmaceuticals might be subject to specific legislation and require specific transport requirements and are therefore, excluded from the scope of this document.

NOTE Resources covered by requirements of this document include facilities, refrigerated vehicles, cold stores, and staff members. This document is not limited to covering specific sizes of vehicles, as long as the performance requirements can be met. Land transport refrigerated vehicles which are conveyed in a ship as roll-on/roll-off vehicles are covered by this document. While this document does not cover requirements directly relating to the quality or safety of the refrigerated parcels being delivered, attention is drawn to specific country legislation that might require a refrigerated delivery service provider to adhere to additional requirements outside of this document, such as monitoring the temperature of the refrigerated parcel itself, or specific requirements regarding the segregation of different types of refrigerated parcel. It is important to note that the contents of refrigerated parcels referenced within this document are not limited to edible or perishable products.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

Note 2 to entry: An insulated container can be either a separate container, or it can be a container within a *refrigerated vehicle* (3.15) or non-refrigerated vehicle (see 3.11 and 3.15).

3.8 operation site

location forming part of the *transport network* (3.21) where refrigerated parcels are:

- a) transferred from one *refrigerated enclosure* (3.11) to another as part of the *geographical routing system* (3.6); or
- b) submitted to the refrigerated delivery service by a *delivery service user* (3.4); or
- c) collected by a *recipient* (3.10)

3.9 operational manual

set of instructions regarding how equipment functions

3.10 recipient

person or organization named by the *delivery service user* (3.4) as being located at the *designated destination* (3.5) for the delivery of the refrigerated parcel

3.11 refrigerated enclosure

temperature-controlled enclosure within a *refrigerated vehicle* (3.15) or an insulated container, which has its own means of *cooling material* (3.3), that is artificially maintained at a *service transport temperature* (3.18.2) and that can accommodate multiple *chilled parcels* (3.14.1) or multiple *frozen parcels* (3.14.2) during transport

Note 1 to entry: This could be the temperature-controlled body of a truck, or insulated container containing *cooling material* (3.3).

3.12 refrigerated delivery service provider

company or organization providing the refrigerated delivery services

3.13 indirect refrigerated delivery service

operation that offers the transport of refrigerated parcels from a *delivery service user* (3.4) to a *recipient* (3.10) through a temperature-controlled *transport network* (3.21), similar to a postal service

Note 1 to entry: Direct refrigerated delivery service means an operation that offers the transport of refrigerated parcels directly from a delivery service user to a recipient without either transference between *refrigerated enclosure* (3.11) or through a temperature-controlled transport network. Direct refrigerated delivery services are excluded from this document (see [Clause 1](#)).

3.14 Refrigerated parcels

3.14.1 chilled parcel

packaged goods that have been refrigerated to within a positive *service transport temperature* (3.18.2) specified by the *refrigerated delivery service provider* (3.12) and agreed by service users in order to be carried or sent by the refrigerated delivery service

Note 1 to entry: There are different temperature categories and requirements for different types of chilled goods, especially with regard to chilled food and food-based products. This determines the service transport temperature parameters given by a refrigerated delivery service provider. See also [4.5](#).

3.14.2
frozen parcel
packaged goods which have been refrigerated to within a negative *service transport temperature* (3.18.2) specified by the *refrigerated delivery service provider* (3.12) and agreed by service users in order to be carried or sent by the refrigerated delivery service

Note 1 to entry: The service transport temperature for frozen parcels might, in addition, depend upon the frozen category within which the goods fall (for food or food-based products being transported, this is deep frozen or quick frozen, for example). See also 4.5.

3.15
refrigerated vehicle
road transport vehicle constructed with one or more temperature-controlled enclosures with an integrated cooling system which is used for the transport of packages requiring controlled temperature conditions in transit

Note 1 to entry: A refrigerated vehicle contains one or multiple *refrigerated enclosures* (3.11), see 9.2.1.

3.16
responsible person
individual appointed by the *refrigerated delivery service provider* (3.12) to manage the people, processes and resources of an *operation site* (3.8)

Note 1 to entry: This might be an operational site manager or equivalent role.

3.17
temperature-controlled environment
area in which the environment is maintained at a specific temperature or within a specified temperature range

Note 1 to entry: This might be for example, a *cold store* (3.2.2), *refrigerated enclosure* (3.11) within a *refrigerated vehicle* (3.15), or a refrigerated room.

3.18 Temperature ranges and maximum temperatures

3.18.1
operational transport temperature
temperature range, or level of refrigeration, excluding temperature rises caused by defrost events, given either:

- a) for *chilled parcel* (3.14.1) delivery or *frozen parcel* (3.14.2) delivery, as a temperature range containing a maximum and minimum temperature limit; or
- b) for frozen parcel delivery, as a maximum temperature limit;

which is defined and accepted by the *refrigerated delivery service provider* (3.12) as that within which, or below which, the refrigerated delivery service operations of *refrigerated enclosures* (3.11) and cold stores are conducted

3.18.2
service transport temperature
temperature range, or level of refrigeration, excluding temperature rises caused by defrost events, given either:

- a) for *chilled parcel* (3.14.1) delivery or *frozen parcel* (3.14.2) delivery, as a temperature range containing a maximum and minimum temperature limit; or
- b) for frozen parcel delivery, as a maximum temperature limit;

which is defined by the *refrigerated delivery service provider* (3.12) as that within which, or below which, the refrigerated parcels are to be delivered

Note 1 to entry: The service transport temperature is not the temperature of the refrigerated parcels.

Note 2 to entry: Service transport temperature is given as a temperature range and a maximum temperature limit, see 4.5.3 regarding temperature ranges or maximum temperatures for frozen parcel delivery.

Note 3 to entry: Defrost events are necessary for *frozen parcel* (3.14.2) delivery to remove the build-up of ice on refrigeration units and to enable refrigeration to continue. However, these cause the *service transport temperature* (3.18.2) or maximum temperatures to be temporarily exceeded within the *refrigerated enclosure* (3.11) or *cold store* (3.2.2). Defrost events should be conducted to maintain functional operations without adversely affecting the refrigerated parcels. The frequency with which defrosts are carried out should be conducted in accordance with the manufacturer's instructions or advice sought from the manufacturer, where appropriate. See also 4.5.

Note 4 to entry: Attention is drawn to national statutory or regulatory requirements for service transport temperatures.

3.19 transfer

process of moving a refrigerated parcel:

- a) into the refrigerated delivery service from a *delivery service user* (3.4);
- b) between *refrigerated enclosures* (3.11); and/or *cold stores* (3.2.2); or
- c) from the refrigerated delivery service to a *recipient* (3.10); within the refrigerated delivery service

Note 1 to entry: Transfer might include, for example, points at which the refrigerated parcel is transferred from an inter-site *refrigerated vehicle* (3.15) to another refrigerated enclosure. Transfer happens through a temperature-controlled environment or a *non-temperature-controlled environment* (3.17). It is important to inform the delivery service user of this as it could be a critical factor for their selection of a particular refrigerated delivery service. The level of information provided by the *refrigerated delivery service provider* (3.12) is likely to depend on the type of refrigerated delivery service offered. However, it is recommended that the number of times and conditions under which a refrigerated parcel are likely to be exposed are stated. See also 7.3 and 10.3.

Note 2 to entry: The process of moving a refrigerated parcel from one refrigerated vehicle to another is referred to as "cross-docking".

3.20 transfer time

period of time, expressed in seconds, for which a refrigerated parcel is out of a *temperature-controlled environment* (3.17) during *transfer* (3.19)

3.21 transport network

system comprising *operation site(s)* (3.8) and *refrigerated vehicles* (3.15) that might be used in the provision of a refrigerated delivery service

3.22 vehicle schedule

timetable for *refrigerated vehicles* (3.15) moving between *operation sites* (3.8)

3.23 work instruction

documented directions for staff members regarding how to carry out an activity within their job

4 Refrigerated delivery service definition and communications

4.1 Refrigerated delivery service attributes

The refrigerated delivery service provider shall determine, document and make publicly available the following refrigerated delivery service attributes:

- a) name of the refrigerated delivery service (see [4.2](#));
- b) refrigerated delivery service provider's contact details and customer service (see [4.4](#));
- c) service transport temperature of the refrigerated delivery service (see [4.5](#)) available for the delivery service users;
- d) targeted delivery service users;
- e) accepted terms and conditions for refrigerated parcels (see [4.6](#)), including:
 - 1) items not accepted for transport by the refrigerated delivery service provider (see [4.6.2](#));
 - 2) areas for refrigerated parcel acceptance and areas for refrigerated parcel delivery to/collection by a recipient (see [4.6.3](#));
 - 3) refrigerated delivery service operation business days and hours (see [4.6.4](#));
 - 4) opening hours and days of the week for acceptance and delivery locations (see [4.6.5](#));
 - 5) standard delivery timescales (times/days) (see [4.6.6](#));
 - 6) non-delivery of refrigerated parcels, including holding times and/or returns, as applicable and recalled refrigerated parcels (see [4.6.7](#)); and
 - 7) fees and payment options.

When changes are made to the refrigerated delivery service attributes, the relevant documents shall be updated, made publicly available and communicated to delivery service users.

The refrigerated delivery service attributes shall be communicated to delivery service users upon request and at the point of agreeing to use the refrigerated delivery service.

4.2 Name of the refrigerated delivery service

The refrigerated delivery service shall have a name or a refrigerated delivery service description that clearly describes that the refrigerated delivery service provides the temperature-controlled delivery of refrigerated parcels.

For further information, see [A.1.1](#).

4.3 Business licence for refrigerated delivery service providers

Where it is necessary for the refrigerated delivery service provider to obtain a business licence(s) to operate a refrigerated delivery service, it shall implement a procedure to check the presence and the validity of the business licence(s) or the documentation, and to undertake further action where required.

4.4 Refrigerated delivery service provider's contact details and customer service

The refrigerated delivery service provider shall make publicly available its contact details for the purpose of addressing any enquiries, complaints or feedback that potential and current delivery service users, and/or refrigerated parcel recipients might have.

NOTE The contact details might go through to a call centre, website, or operation site, for example. Contact might be provided through an email address, online feedback form, or phone number. EN 8477 is a code of practice which gives recommendations for customer service good practice.

4.5 Service transport temperature of the refrigerated delivery service

4.5.1 General

A service transport temperature shall be identified for the refrigerated delivery service in accordance with [4.5.2](#) or [4.5.3](#), as applicable.

NOTE 1 This service transport temperature excludes temperature fluctuations caused by defrost events within a refrigeration unit (see [3.18.2](#)) which are likely to temporarily exceed the refrigerated delivery service temperature limits.

The refrigerated delivery service provider shall identify the situations where refrigerated parcels are exposed to temperatures exceeding the defined service transport temperature.

Where applicable, a process to stop transporting the parcel before delivery shall be documented and implemented.

NOTE 2 A refrigerated delivery service provider can choose to detail their contingency plans or work instructions for managing such situations [see [10.2.1 f](#)].

4.5.2 Chilled parcels

The refrigerated delivery service provider shall identify the maximum temperature limit and the minimum temperature limit of the service transport temperature of the refrigerated delivery service for chilled parcels.

4.5.3 Frozen parcels

The refrigerated delivery service provider shall identify, as a minimum, the maximum temperature limit of the service transport temperature of the refrigerated delivery service for frozen parcels. This shall not include temperature rises during periods of defrost.

NOTE While it is critical to identify the highest acceptable temperature for a frozen parcel service transport temperature, it would not, in most cases, be necessary to identify the minimum temperature limit for the frozen parcel service transport temperature as there would be little impact on the frozen parcels from being subjected to increasingly lower temperatures. Where it is necessary, the maximum and minimum temperature limits of the temperature range can be identified by the refrigerated delivery service provider and/or agreed with the delivery service user.

4.6 Accepted terms and conditions for refrigerated parcels

4.6.1 General

The refrigerated delivery service provider shall determine their terms and conditions for carriage of refrigerated parcels, including, as a minimum, their:

- a) maximum size;
- b) maximum mass;

- c) packaging conditions, including protection against cross-contamination based on the contents of the refrigerated parcel (see [Annex B](#));
- d) pre-cooling/pre-freezing conditions by the delivery service users (see [6.3](#)).

For further information, see [A.1.2](#).

4.6.2 Items not accepted for transport by the refrigerated delivery service provider

The refrigerated delivery service provider shall define a list of prohibited items for transport.

NOTE These items might be prohibited by law, and/or items not accepted by the refrigerated delivery service provider.

4.6.3 Areas for refrigerated parcel acceptance and areas for refrigerated parcel delivery to/collection by a recipient

The refrigerated delivery service provider shall define the geographical areas and locations within which it operates for both the acceptance and delivery to/collection by a recipient of a refrigerated parcel.

NOTE This can include home acceptance or a refrigerated delivery service location and can also include the regions covered by the refrigerated delivery service.

4.6.4 Refrigerated delivery service operation business days and hours

The refrigerated delivery service provider shall determine the business days and/or hours covered by the refrigerated delivery service operation.

The refrigerated delivery service provider shall take into account calendar dates such as public holidays and communicate these to the delivery service user.

For further information, see [A.1.3](#).

4.6.5 Opening hours and days of the week of acceptance and delivery locations

The refrigerated delivery service provider shall determine the opening hours and days that the operation sites are open for the acceptance, or collection, of refrigerated parcels.

4.6.6 Standard delivery timescales (times/days)

The refrigerated delivery service provider shall provide indicative delivery durations for the refrigerated parcels from the point of acceptance from the delivery service user to the point of delivery at the designated destination.

NOTE For example, the number of days required for the delivery of a refrigerated parcel from Tokyo to Osaka.

Where applicable to the refrigerated delivery service being offered, the options for delivery times and delivery dates shall be determined by the refrigerated delivery service provider.

4.6.7 Non-delivery of refrigerated parcels including holding times, returns and recalls

The refrigerated delivery service provider shall determine the options for the recipient in the event that the recipient is absent at the time of delivery.

The refrigerated delivery service provider shall indicate the maximum amount of time that refrigerated parcels are to be held either for redelivery, return to delivery service user or disposal.

For further information, see [A.1.4](#).

5 Transport network

5.1 General

The refrigerated delivery service provider shall establish a transport network within the areas covered by the refrigerated delivery service (see [4.6.3](#)) in order to provide transport routes for the refrigerated delivery service within the standard delivery timescales (see [4.6.6](#)).

The refrigerated delivery service provider shall measure, document and retain the expected time taken for each refrigerated vehicle to travel between each connected operation site.

NOTE 1 Attention is drawn to applicable national and local legislation for travel speed limits and traffic regulations, when measuring the travel times between operation sites.

The document of distances and times shall be updated when the transport network changes (i.e. when operation sites are created, closed or moved, or whenever transport routes are changed).

NOTE 2 Distances and times can be used to create the vehicle schedules and update the standard delivery timescales (see [4.6.6](#)).

The refrigerated delivery service provider shall create and document vehicle schedules for refrigerated vehicles moving between operation sites. The vehicle schedules shall be updated and communicated to the relevant responsible person(s) (see [5.4.2](#)) when the transport network changes, or when there is an increase in demand (see [5.3](#)) and additional resources are required.

The refrigerated delivery service provider shall implement a system to monitor and locate each refrigerated parcel within the refrigerated delivery service [see [12.1 c](#)].

The refrigerated service provider shall retain such records in accordance with relevant regulations.

NOTE 3 This system might be a tracking and tracing system.

5.2 Geographical routing system

The refrigerated delivery service provider shall determine and implement a geographical routing system within the transport network.

The geographical routing system, any geographical codes (for example, post codes, operation-site codes) and the operation sites where the geographical routing operations are carried out shall be defined and documented. The documents shall be updated when the geographical routing system or the transport network changes.

NOTE See also [7.2 d](#)) and [7.6](#) regarding geographical routing.

5.3 Demand and available resources

The refrigerated delivery service provider shall:

- a) monitor and record the number of chilled parcels and/or frozen parcels accepted for delivery on a daily basis;
- b) undertake an analysis of the maximum expected number of chilled parcels and/or frozen parcels within a defined period at each operation site and across the whole transport network;
- c) undertake an analysis of the maximum number of chilled parcels and/or frozen parcels that can be accepted at each operation site and across the whole transport network. This shall be documented, reviewed and updated a minimum of once a year;
- d) undertake a check that the refrigerated delivery service has the correct resources to provide the refrigerated delivery service for the maximum expected number of chilled parcels and/or frozen parcels within a particular period at each operation site and across the whole transport network.

Where there are peak periods in which the demand is expected to rise, a contingency plan shall be implemented to either obtain additional resources for each operation site, or to limit the acceptance of chilled parcels and/or frozen parcels.

NOTE The resources available during peak periods are expected to be at the appropriate level to provide the refrigerated delivery service in accordance with the service transport temperature (see [4.5](#)) and the standard delivery timescales (see [4.6.6](#)).

Where the increase in demand is consistent, an assessment regarding the viability of extending existing operation sites (for example, additional resources) or establishing new operation sites shall be carried out, and a plan created for actions to be taken.

5.4 Operation sites

5.4.1 General

The refrigerated delivery service provider shall define and document the function of each operation site.

The resources required for each operation site to carry out its function shall be defined in accordance with [5.3](#) and provided.

The operation site shall be able to accommodate the refrigerated vehicles which allows their cooling equipment to run while waiting to unload or, when loaded, waiting to depart, as well as other resources allocated to the operation site.

Where there is a change to the function of an operation site, the relevant documents shall be updated. A review of the required resources to accommodate the change in function shall be undertaken and action taken to implement additional resources, where required.

5.4.2 Responsible person

The refrigerated delivery service provider shall:

- a) assign a responsible person to each operation site;
- b) communicate to the responsible person in writing their expected duties.

As a minimum, the responsible person shall be expected to implement processes in the operation site so that:

- 1) daily checks are carried out to verify that the required resources for the operation site to function are present (see also [5.4.1](#));
- 2) daily checks are carried out to verify that the resources function correctly;
- 3) remedial action is undertaken if the checks from 1) and 2) show that the required resources are not present or are not functioning correctly.

The daily checks carried out in 1) and 2) shall be recorded and retained.

NOTE The duration of the retention of documents from the daily checks might differ, depending on the location of the refrigerated delivery service provider. Attention is drawn to national legislation/regulations regarding timeframes for retention of documents.

5.4.3 Transport

The refrigerated delivery service provider shall allocate refrigerated vehicles and/or thermally insulated containers as a resource to each operation site.

The service provider shall allocate refrigerated and monitored means that can be equipped with active or passive cold solutions

The specification of the allocated refrigerated vehicles and/or thermally insulated containers shall be based on the capabilities required for the function of each operation site (see [5.4.1](#)).

The number of refrigerated vehicles and/or thermally insulated containers allocated to each operation site shall be:

- a) consistent with the demands for each operation site;
- b) consistent with the demands of the transport network (see [5.3](#)).

The refrigerated enclosure shall follow the requirements of [9.2](#).

6 Information exchanged between the refrigerated delivery service provider and the delivery service user

6.1 Documented information

The refrigerated delivery service provider shall document and maintain the information provided and obtained in [6.2](#), [6.3](#) and [6.4](#) and a copy of the information shall be provided to the delivery service user on acceptance of a refrigerated parcel for delivery.

6.2 Information to be obtained from the delivery service user

The refrigerated delivery service provider shall obtain the following information from the delivery service user prior to acceptance of a refrigerated parcel for delivery:

- a) the name, address and other contact details (for example, phone numbers, email address) of both the delivery service user and of the recipient;
- b) the service transport temperature (see [4.5](#)) selected for delivery;
- c) contents of refrigerated parcel;
- d) special conditions required, where applicable.

NOTE Special conditions might include stating any limited holding times in the event of non-delivery where the refrigerated parcel needs to be delivered within a short time frame, or where a fragile refrigerated parcel requires additional care to be taken during delivery. Refrigerated delivery service providers covering the transport of refrigerated parcels containing foodstuff can refer to [Annex B](#) for further information. See also [4.6.1](#) c) regarding cross-contamination.

Where the information required in a), b) and c) are not obtained, the refrigerated delivery service provider shall not accept the refrigerated parcel for delivery.

6.3 Delivery service user confirmation

The refrigerated delivery service provider shall obtain from the delivery service user:

- a) confirmation that the refrigerated parcel(s) for delivery is in a pre-cooled/pre-frozen state in advance and that it meets the other required conditions in accordance with [4.6.1](#);
- b) confirmation that the declared content of the refrigerated parcel (s) for delivery is not prohibited and meets the required conditions in accordance with [4.6.2](#)

NOTE These confirmations can be endorsed by, for example, a signature, an opt-in (i.e. a tick box) or a sales contract.

6.4 Information to be provided by the refrigerated delivery service provider

The refrigerated delivery service provider shall provide the following information to the delivery service user on acceptance of a refrigerated parcel for delivery:

- a) the name of the refrigerated delivery service provider;
- b) staff member identification;
- c) the name of the refrigerated delivery service (see [4.2](#));
- d) the parcel identification number;
- e) the date of acceptance and the standard delivery timescales (see [4.6.6](#)) or the expected date of delivery;
- f) the size and/or mass of the refrigerated parcel;

NOTE This can be checked by the refrigerated delivery service provider on acceptance of the refrigerated parcel.
- g) the cost of the refrigerated delivery service.

7 Refrigerated parcels

7.1 Acceptance of refrigerated parcels

At the time of acceptance of a refrigerated parcel, the refrigerated delivery service provider shall exchange the information in [6.2](#), [6.3](#) and [6.4](#) with the delivery service user.

7.2 Labelling, marking and visible information

The refrigerated delivery service provider shall label or mark each refrigerated parcel, at the time of acceptance, with the following information, as a minimum:

- a) the refrigerated parcel identification number;
- b) the contents of the refrigerated parcel;
- c) whether a chilled or a frozen package;
- d) the designated destination (see [3.5](#)) or the geographical code (see [5.2](#));
- e) the date of acceptance and the expected date of delivery;
- f) the name of the refrigerated delivery service (see [4.2](#)).

The delivery service user shall also attach a document to the parcel containing the information in a) to f) above. The refrigerated delivery service provider shall check that the information labelled or marked is visible on an external face of the refrigerated parcel. The refrigerated delivery service provider shall also record the time and date of collection.

For further information, see [A.2.1](#).

7.3 Transferring refrigerated parcels into a refrigerated enclosure or cold store

The refrigerated delivery service provider shall confirm that the refrigerated enclosure (see [3.11](#)) or cold store is within the service transport temperature (as defined in accordance with [4.5](#)), before transferring a refrigerated parcel into it.

Where the refrigerated enclosure or cold store is not within the service transport temperature (as defined in accordance with [4.5](#)), relevant action in accordance with the work instructions (see [10.2](#)) shall be taken to achieve the service transport temperature (see also [9.2](#) and [9.3](#)).

Where it is necessary to pre-cool or pre-freeze the refrigerated enclosure or cold store for it to be within the service transport temperature (as defined in accordance with [4.5](#)), the required time [see [10.5 c](#)] shall be allocated and the temperature confirmed to be within the service transport temperature before refrigerated parcels are transferred into it.

For further information, see [A.2.2](#).

7.4 Transferring refrigerated parcels between refrigerated enclosures and/or cold stores

Where refrigerated parcels are transferred between refrigerated enclosures and/or cold stores, the refrigerated delivery service provider shall transfer the refrigerated parcels in accordance with [10.3](#), the operational guidelines for transfers.

The refrigerated enclosures and/or cold stores to which a refrigerated parcel is being transferred shall be checked to have a temperature within the service transport temperature as defined in accordance with [4.5](#), before transferring a refrigerated parcel into it.

Where the refrigerated enclosure and/or cold store to which the refrigerated parcel is being transferred is not within the service transport temperature (see [4.5](#)), relevant action in accordance with the work instructions (see [10.2](#)) shall be taken to achieve the service transport temperature (see also [9.2](#) and [9.3](#)).

Where it is necessary to pre-cool or pre-freeze the refrigerated enclosure and/or cold store to which the refrigerated parcel is being transferred for it to be within the service transport temperature (see [4.5](#)), the required time [see [10.5 c](#)] shall be allocated before a refrigerated parcel is transferred into it.

For further information, see [A.2.3](#).

7.5 Temporary storage of refrigerated parcels in operation sites

Where a refrigerated parcel is in an operation site, the refrigerated parcel shall be held in the cold store within the service transport temperature (see [4.5](#)).

Where a refrigerated parcel has been temporarily stored in a cold store in an operation site, a process shall be implemented to carry out checks on a daily basis to see if further action is required.

For further information, see [A.2.4](#).

7.6 Geographical sorting of refrigerated parcels

Where more than one refrigerated delivery service having different service transport temperatures are operating within an operation site in which refrigerated parcels are being geographically sorted, the refrigerated parcels from each service transport temperature shall be kept separate.

NOTE Attention is drawn to national legislation which can require the segregation of certain types of refrigerated parcels.

7.7 Delivery to the recipient

At the time of delivery to/collection by a recipient of a refrigerated parcel, the refrigerated delivery service provider shall exchange the information in accordance with [Clause 8](#) with the recipient.

Where the recipient is absent on attempted delivery, the refrigerated delivery service provider shall:

- a) inform the recipient that they have tried to deliver the refrigerated parcel by providing a communication (for example, message card, email, online system), containing the following information:
 - 1) the name of the refrigerated delivery service provider;
 - 2) the parcel identification number;
 - 3) the date and time of the attempted delivery;
 - 4) the contact details of the refrigerated delivery service provider (see [4.4](#));
 - 5) the options for the recipient to receive the refrigerated parcel (for example, redelivery, collection by a recipient at the operation site) (see [4.6.7](#));
 - 6) that it is a refrigerated parcel (i.e. chilled or frozen) and any time constraints for collection by a recipient, where applicable (see [4.6.7](#));
- b) place the refrigerated parcel in a refrigerated enclosure or cold store within the service transport temperature, as defined in [4.5](#).

Where the refrigerated parcel is loaded back into the refrigerated enclosure or cold store, this shall be carried out in accordance with [10.3](#).

For further information, see [A.2.5](#).

8 Information exchanged between the refrigerated delivery service provider and the recipient

8.1 Information to be obtained from the recipient on delivery of the refrigerated parcel

The refrigerated delivery service provider shall request the following information from the recipient on delivery of a refrigerated parcel:

- a) the name of the recipient;
- b) the signature confirming that the refrigerated parcel has been received.

8.2 Information to be obtained from the recipient on collection by the recipient of the refrigerated parcel from an operation site

The refrigerated delivery service provider shall request the following information from the recipient on collection of a refrigerated parcel:

- a) the name and address of the recipient;
- b) the identification of the recipient;
- c) the parcel identification number;
- d) the signature confirming that the refrigerated parcel has been received.

NOTE When the recipient is absent at the time of delivery of the refrigerated parcel, the information that is contained within the communication which is provided to them in [7.7](#) is helpful.

8.3 Information to be provided by the refrigerated delivery service provider on delivery of the refrigerated parcel

The refrigerated delivery service provider shall provide the following information to the recipient on delivery of a refrigerated parcel:

- a) the name of the refrigerated delivery service provider;
- b) the staff member identification and purpose of the visit; and
- c) the service transport temperature of the refrigerated parcel selected for delivery [see [4.5](#) and [6.2 b\)](#)]; or
- d) the name of the refrigerated delivery service (see [4.2](#)).

NOTE The refrigerated delivery service provider advises the recipient to maintain the temperature of the refrigerated parcel after delivery (for example, within a refrigerator or freezer).

8.4 Information to be provided by the refrigerated delivery service provider on collection by a recipient of the refrigerated parcel from an operation site

The refrigerated delivery service provider shall provide the recipient with the following on collection of a refrigerated parcel:

- a) the service transport temperature of the refrigerated parcel selected for delivery [see [4.5](#) and [6.2 b\)](#)]; or
- b) the name of the refrigerated delivery service (see [4.2](#)).

9 Conditions for operation sites, refrigerated enclosures, cold stores and cooling materials

9.1 Operation site

9.1.1 Security of operation site

The refrigerated delivery service provider shall implement security measures on each operation site to prevent unauthorised access causing theft and damage to the facility, refrigerated vehicles, cold stores and refrigerated parcels.

9.1.2 Protection from external conditions

The refrigerated delivery service provider shall design each operation site such that it provides cover and protection from external conditions during:

- a) the transfer of a refrigerated parcel into a refrigerated enclosure or cold store in an operation site (see [7.3](#));
- b) the transfer of a refrigerated parcel between refrigerated enclosures and/or cold stores in an operation site (see [7.4](#));
- c) the temporary storage of a refrigerated parcel within a cold store in an operation site (see [7.5](#)).

NOTE See also [5.4](#) regarding operation sites.

9.2 Refrigerated enclosures

9.2.1 General

The refrigerated delivery service provider shall use refrigerated vehicles that contain at least one refrigerated enclosure that can be temperature controlled and monitored within the service transport temperature range (see [4.5](#)). The refrigerated delivery service provider shall maintain the internal temperature of the refrigerated enclosure within the service transport temperature range defined by the refrigerated delivery service provider (see [4.5](#)) while the refrigerated enclosure is in operation. Where the refrigerated enclosure requires cooling material that functions for a limited amount of time (for example, eutectic plates), the refrigerated delivery service provider shall check and replace or modify it, as applicable, in accordance with the work instructions (see [10.2](#)) and the operational manual for cooling materials (see [10.7](#)).

Where the refrigerated delivery service provider offers a refrigerated delivery service at two or more service transport temperatures (for example, chilled and frozen), and refrigerated parcels are transported at different service transport temperatures within the same refrigerated vehicle, each refrigerated enclosure shall be physically separated and temperature controlled.

The refrigerated enclosure shall be constructed and maintained to minimise temperature variances through the structure when closed and in operation.

Unless the refrigerated enclosure is being used for the transfer of refrigerated parcels, the refrigerated delivery service provider shall keep closed any openings to the refrigerated enclosure when it is in use.

For further information, see [A.3.1](#).

9.2.2 Temperature monitoring of a refrigerated enclosure

The refrigerated delivery service provider shall insert a calibrated temperature monitoring instrument into the refrigerated enclosure to monitor its internal temperature. The internal temperature measured by the temperature monitoring instrument shall be visible during transport.

The temperature inside the refrigerated enclosure shall be checked and recorded and these records retained for a defined period of time (for example, 12 months), as a minimum

- a) after pre-cooling/pre-freezing the refrigerated enclosure;
- b) at the start and end of every transport journey.

The temperature inside the refrigerated enclosure shall also be checked, as a minimum, at every point of transfer, where this is not covered by b).

For the temperature monitoring and recording, see [12.3](#).

Monitoring equipment shall be calibrated against measurement standards defined by international or national standards.

For further information, see [A.3.2](#).

9.3 Cold stores

9.3.1 General

The refrigerated delivery service provider shall use cold stores that contain a refrigerated enclosure(s) that can be temperature controlled within the service transport temperature (see [4.5](#)).

Cold stores in operation sites shall be able to function continuously without interruption. In the event that a power source is interrupted, a contingency plan shall be in place.

NOTE Cold stores in operation sites withstand any forces to which they are expected to be subjected. See also [10.6](#) regarding maintenance. In order to mitigate the risk of interruption to cold store operation, a contingency plan might include, for example, a back-up generator, or the temporary use of cooling materials in the event of an electric outage.

The refrigerated delivery service provider shall continuously maintain the internal temperature of cold stores at the service transport temperature defined in accordance with [4.5](#) while in operation.

Where the refrigerated delivery service provider offers a refrigerated delivery service that operates at two or more service transport temperatures (for example, chilled and frozen), and where refrigerated parcels to be maintained at different service transport temperatures are present at the same operation site, each temperature enclosure of the cold store shall be enclosed and separated.

Cold stores shall be constructed and maintained to minimise temperature variances through the structure when closed and in operation.

Unless cold stores are being used for transferring refrigerated parcels, the refrigerated delivery service provider shall keep any openings to the enclosure closed when the cold store is in use.

The maintenance procedure and service interval should be in accordance with the cold store and cooling systems manufacturer's recommended maintenance schedule.

9.3.2 Temperature monitoring of cold stores in operation sites

The refrigerated delivery service provider shall insert a calibrated temperature monitoring instrument into each cold store to continuously monitor the internal temperature. The internal temperatures of each cold store shall be displayed separately.

The internal temperature measured by the temperature monitoring instrument shall be visible.

Where applicable, several sensors may be used to ensure that the temperature is consistent all around the cold store.

The temperature inside the cold store shall be recorded at three scheduled times a day as a minimum and maintained for a defined period of time (for example, 12 months).

Monitoring equipment shall be calibrated against measurement standards defined by international or national standards.

For further information, see [A.3.3](#).

9.4 Cooling materials

Where cooling materials are used, the refrigerated delivery service provider shall check that they maintain the temperature of the refrigerated enclosure (see [9.2.1](#)) at the service transport temperature defined by the refrigerated delivery service provider (see [4.5](#)) while the refrigerated enclosure is in operation.

For further information, see [A.3.4](#).

9.5 Cooling material cold stores

9.5.1 General

Where cooling materials are used within the refrigerated delivery service, the refrigerated delivery service provider shall use cooling material cold stores for their refrigeration and storage.

The cooling material cold stores in operation sites shall:

- a) have a refrigerated enclosure that can be maintained at, or below, the freezing temperature of the cooling materials;
- b) be able to function continuously without interruption. A contingency plan shall be implemented to cover power source interruptions.

NOTE Cooling material cold stores in operation sites withstand any forces to which they are expected to be subjected. In order to mitigate the risk of interruption to cooling material cold store operation, a contingency plan might include, for example, a back-up generator.

The refrigerated delivery service provider shall maintain the internal temperature of the cooling material cold store below the freezing temperature of the cooling materials.

Unless the cooling material cold store is being used for loading or unloading cooling materials, the refrigerated delivery service provider shall keep any openings to the enclosure closed when the cooling material cold store is in use.

The maintenance procedure and service interval should be in accordance with the cold store and cooling systems manufacturer's recommended maintenance schedule.

9.5.2 Temperature monitoring of cooling material cold stores

The refrigerated delivery service provider shall insert a calibrated temperature monitoring instrument into the cooling material cold store to monitor the internal temperature.

The internal temperature measured by the temperature monitoring instrument shall be visible.

The temperature inside the cooling material cold store shall be checked at three scheduled times a day, as a minimum.

For the temperature monitoring and recording, see [12.3](#).

For further information, see [A.3.5](#).

10 Work instructions and operational manuals

10.1 General

The refrigerated delivery service provider shall identify and document relevant legislation and regulations applicable to its refrigerated delivery service.

The refrigerated delivery service provider shall determine and document the operational transport temperature.

The refrigerated delivery service provider shall align their work instructions (see [10.2](#)) and their operational manuals (see [10.4](#) to [10.8](#)) in accordance with the operational transport temperature and the operational guidelines (see [10.3](#)).

10.2 Work instructions

10.2.1 General

The refrigerated delivery service provider shall provide work instructions for each staff member working within the refrigerated delivery service, as applicable to their role.

The work instructions shall include, as a minimum:

- a) the handling of chilled parcels and/or frozen parcels (see [10.2.2](#));

- b) the transport network (see [5.1](#));
- c) the geographical routing system (see [5.2](#));
- d) the operation sites (for example, security) (see [5.4](#));
- e) the procedure to confirm pre-cooling/pre-freezing conditions of refrigerated parcels with the delivery service user (see [6.3](#));
- f) the contingency plan(s) in the event that a refrigerated parcel is exposed to non-temperature-controlled environments exceeding those stated in the operational guidelines (see [10.3](#)), including if a refrigerated parcel is wrongly sorted into a different service transport temperature;
- g) the handling of equipment, including procedures for the use of cooling materials (see [10.4](#) to [10.8](#)), including any potential contact with hazardous or dangerous substances;
- h) the hygiene of employees and anyone involved in the service, transportation and facilities;
- i) minimising the door opening duration.

Whenever there are changes made to the operational processes or procedures, the refrigerated delivery service provider shall update the relevant work instructions.

10.2.2 Handling of refrigerated parcels

The work instructions for the handling of chilled parcels and/or frozen parcels shall include that the refrigerated parcels shall not be:

- 1) damaged, defaced;
- 2) thrown, dropped, placed directly on the ground, on heated surfaces or in direct sunlight;
- 3) exposed to conditions outside of the operational guidelines (see [10.3](#));
- 4) put into the wrong service transport temperature.

In the case of 1), 2) and 3), the following actions are recommended to prevent the cross-contamination;

- a) isolate the refrigerated parcel and place in a sealed, insulated container;
- b) follow the procedure of the hygiene plan;
- c) consult the service user and seek the instruction on the disposal of parcels.

NOTE For example, chilled parcels are not put within the refrigerated enclosures or cold stores for frozen parcels because chilled parcels can become frozen, or partially frozen. If chilled parcels are held within the refrigerated enclosure or cold stores for frozen parcels, they can become frozen or partially frozen.

10.3 Work instructions for transferring refrigerated parcels

10.3.1 The refrigerated delivery service provider shall have operational guidelines for:

- a) the transfer of refrigerated parcels from the delivery service user to a refrigerated enclosure or cold store;
- b) the transfer of refrigerated parcels between refrigerated enclosures and/or cold stores;
- c) the transfer of refrigerated parcels to the recipient from a refrigerated enclosure or cold store.

For further information, see [A.4.1](#).

10.3.2 These operational guidelines shall cover:

- a) the transfer time durations;
- b) the temperature of the temperature-controlled environment, or non-temperature-controlled environment to which parcels are exposed;
- c) the recording, monitoring and storage of data covered by a) and b).

For further information, see [A.4.1](#).

10.4 Operational manual for refrigerated enclosure

The refrigerated delivery service provider shall provide documented procedures for the following aspects of the refrigerated enclosure in accordance with manufacturers' instructions:

- a) use and operation of the refrigerated enclosure including defrost procedures;
- b) pre-cooling/pre-freezing of the refrigerated enclosure (see also [10.5](#));
- c) best loading practices to ensure optimised air flow;
- d) temperature monitoring of the refrigerated enclosure when in operation (see [9.2.1](#));
- e) maintenance of the refrigerated enclosure including cooling systems;
- f) cleaning of the refrigerated enclosure;
- g) where cooling materials are used, the duration of the cooling material in relation to the:
 - 1) type of cooling material;
 - 2) amount of cooling material present;
 - 3) volume of the refrigerated enclosure;
 - 4) insulation properties of the refrigerated enclosure.
- h) procedure for transferring refrigerated parcels to recipient, for example by avoiding lengthy door openings.

NOTE This is normally in relation to the amount and type of cooling material present.

Whenever there are changes made to the refrigerated enclosure, the relevant documented procedures shall be updated.

10.5 Operational manual for the pre-cooling and pre-freezing of refrigerated enclosures

The refrigerated delivery service provider shall provide documented procedures for the pre-cooling and pre-freezing of the refrigerated enclosure covering the following:

- a) method of refrigeration (for example, cooling material, refrigeration unit);
- b) order of steps;
- c) time required to create the defined operational transport temperature (see [10.1](#)) of the refrigerated enclosure;
- d) monitoring of the internal temperature.

10.6 Operational manual for cold stores in operation sites

The refrigerated delivery service provider shall provide documented procedures for the following aspects of cold stores in operation sites:

- a) use and operation;
- b) temperature monitoring when in operation;
- c) maintenance schedule and record;
- d) cleaning schedule and record;
- e) pest control;
- f) defrost of the cold store for frozen parcels, where applicable.

For further information, see [A.4.2](#).

10.7 Operational manual for cooling materials

Where applicable, the refrigerated delivery service provider shall provide documented procedures for the following aspects of cooling materials used in the refrigerated delivery service:

- a) use and operation;
- b) visual monitoring when in operation;
- c) maintenance or replacement; and
- d) cleaning

For further information, see [A.4.3](#).

NOTE Before passive cooling systems are used, studies are conducted and documented information kept on how the systems perform when tested under representative transportation conditions. Conditions, including the following are taken into account:

- a) external temperature conditions;
- b) thermal properties of the containers;
- c) conditions of use (openings, loading rates, etc.);
- d) type and packaging of the passive cooling systems;
- e) expected duration of effectiveness cooling material before recharge.

10.8 Operational manual for cooling material cold stores

Where applicable, the refrigerated delivery service provider shall provide documented procedures in the form of an operational manual for the following aspects of cooling material cold stores used in the refrigerated delivery service operations:

- a) use and operation;
- b) operational temperature;
NOTE 1 This is below the freezing temperature of the cooling materials.
- c) temperature monitoring when in operation;
- d) maintenance schedule and record;

- e) cleaning schedule and record;
- f) defrost.

NOTE 2 Cooling material cold stores operate within, or below, applicable freezing temperatures in order to freeze the cooling materials. To function correctly, the frequency of defrost is conducted in accordance with the manufacturer's instructions, or advice sought from the manufacturer, where appropriate.

11 Staffing

11.1 Training programme

The refrigerated delivery service provider shall design, document and provide relevant training programmes for new staff members engaged in the refrigerated delivery service operations in operation sites.

As a minimum, the training programme shall cover:

- a) work instructions (see [10.1](#) and [10.2](#));
- b) work instructions for transferring refrigerated parcels (see [10.3](#));
- c) use of relevant cold stores (see [10.6](#), [10.8](#));
- d) use of relevant refrigerated vehicles (see [10.4](#), [10.5](#), [10.7](#) and [11.3](#));
- e) handling and transferring refrigerated parcels, where applicable (see [10.2](#) and [10.3](#));
- f) contingency plans for problems within the refrigerated delivery service (for example, cold store breakdown, service transport temperature breaches and manual errors) (see [5.3](#), [9.3.1](#), [9.5.1](#) and [10.2.1](#));
- g) customer service procedures and behaviours, if applicable (see [4.1](#) and [4.4](#));
- h) awareness raising regarding hygiene and sanitation.

The refrigerated service provider shall retain training records and be aware of the relevant regulations.

Each employee in contact with chilled or frozen parcels shall receive appropriate food-safety related training.

When a new staff member has completed the training programme, the refrigerated service provider shall retain training records and be aware of the relevant regulations.

11.2 Additional training

The refrigerated delivery service provider shall provide additional training or repeated training where:

- a) there is a change to the refrigerated delivery service attributes or operations;
- b) there are new processes or procedures introduced in the refrigerated delivery service;
- c) there are new cold stores or there are new refrigerated enclosures; or
- d) a staff member is underperforming.

11.3 Staff members responsible for driving

The refrigerated delivery service provider shall, as a minimum:

- a) request that potential staff members involved in driving activities provide evidence of their valid driving licence prior to being offered a position; and

- b) check that the driving licences of the staff members involved in driving activities are valid on an annual basis;
- c) provide initial and regular update training for drivers for this specialised activity;
- d) provide manufacturers' instructions on the operation of the temperature-controlled equipment.

If the driving staff members are engaged in activities other than driving, refer to [11.1](#) for the contents of the programme to be covered.

NOTE Attention is drawn to national and local legislation regarding driving licences.

12 Monitoring and improving the refrigerated delivery service

12.1 Transport network

The refrigerated delivery service provider shall have a system in place to record and monitor the following:

- a) the number of refrigerated parcels delivered through the transport network and each operation site daily (see [5.3](#));
- b) the identification number of each refrigerated parcel (see [7.2](#));
- c) the location of each refrigerated parcel (see [5.1](#));

NOTE When a refrigerated parcel is at the wrong location, it can be relocated through the system.

- d) the designated destination (for example, geographical code) of each refrigerated parcel;
- e) the size and/or mass of each refrigerated parcel;
- f) the time and date of acceptance of each refrigerated parcel;
- g) the time and date of delivery to the designated destination of each refrigerated parcel;
- h) the total time taken for each refrigerated parcel delivery from acceptance to arrival at the designated destination;
- i) the temperature of the refrigerated enclosures within which the refrigerated parcel has been transported since acceptance from the delivery service user, and, where applicable, the environmental temperatures during transfer times;
- j) non-deliveries of refrigerated parcels.

12.2 Delays and non-deliveries within standard delivery timescales

Where there is a consistent or rising pattern of refrigerated parcels not arriving at the designated destination within the standard delivery timescales (see [4.6.6](#)), the refrigerated delivery service provider shall investigate the cause of the delays or non-deliveries.

Where issues and root causes are identified, a course of action shall be created and followed in order to rectify them.

NOTE This prevents the accumulation of undelivered refrigerated parcels at specific parts of the transport network or prevents a problem from recurring. The specific conditions under which investigations are started are defined by the refrigerated delivery service provider.

12.3 Temperature monitoring and temperature recording of the transport network

The refrigerated delivery service provider shall define and classify the level of refrigerated delivery service temperature monitoring and temperature recording in accordance with [12.3.1](#) and [12.3.2](#).

The level of temperature monitoring and temperature recording shall be expressed using symbols specified in [12.3.1](#) and [12.3.2](#).

The refrigerated delivery service provider shall document the temperature monitoring and temperature recording and its result and retain them.

NOTE 1 The refrigerated delivery service provider can demonstrate the level of temperature monitoring and temperature and its result to the interested parties such as delivery service users to demonstrate that the provided service is temperature-controlled.

NOTE 2 The refrigerated delivery service provider can include the level of temperature monitoring and temperature recording in work instruction or operational manual or instruction.

EXAMPLE As an example of the expression of temperature monitoring and temperature recording, the service provider decides that the level of temperature monitoring and recording is B and 2 respectively (see [12.3.1](#) and [12.3.2](#)). The expression is TM:B, TR:2.

12.3.1 Temperature monitoring

The temperature monitoring of the refrigerated delivery service shall be classified in accordance with [Table 1](#).

For further information see [A.3.2](#) and [A.3.3](#).

Table 1 — Temperature monitoring

Classification	Description
TM:A	Temperature monitoring of the refrigerated enclosures, temperature-controlled environments and non-temperature-controlled environments to which parcels are exposed is continuous throughout the entire refrigerated delivery service process, including during transfer times.
TM:B	Temperature monitoring of the refrigerated enclosures and temperature-controlled environments is continuous throughout the refrigerated delivery service, except during transfer times within non-temperature-controlled environments to which parcels are exposed
TM:C	Temperature monitoring of the refrigerated enclosures and temperature-controlled environments is carried out at identified points throughout the refrigerated delivery service, but is not continuous.

NOTE See [9.3.2](#) regarding cold stores.

If the refrigerated delivery service is classified as TM:C, the refrigerated delivery service provider shall implement some additional process. The process needs to describe tests that shall be done frequently on representative samples of the means of transportation (for example, putting a disposable sensor once a month in a small number of mobile enclosures from each category) (see [12.4](#)).

For further information see [A.3.2](#) and [A.3.3](#).

12.3.2 Temperature recording

The temperature recording of the refrigerated delivery service shall be classified in accordance with [Table 2](#).

Table 2 — Temperature recording

Classification	Description
TR:1	Temperature recording of the refrigerated enclosures, cold stores, temperature-controlled environments and non-temperature-controlled environments to which parcels are exposed is continuous throughout the entire refrigerated delivery service process, including during transfer times
TR:2	Temperature recording of the refrigerated enclosures, cold stores and temperature-controlled environments is continuous throughout the refrigerated delivery service, except during transfer times within non-temperature-controlled environments to which parcels are exposed
TR:3	Temperature recording of the refrigerated enclosures, cold stores and temperature-controlled environments is carried out at identified points throughout the refrigerated delivery service, but is not continuous

For further information see [A.3.2.](#) and [A.3.3.](#)

12.4 Temperature control within the transport network

The refrigerated delivery service provider shall conduct testing of the temperature controls and processes within its refrigerated delivery service a minimum of once a month.

The results of these tests shall be retained for a minimum of 12 months, the refrigerated delivery service provider should be aware of applicable legislation or regulations covering the period of time such documents are to be maintained.

Where the results of the tests demonstrate vulnerabilities or inconsistencies in the refrigerated delivery service temperatures that exceed the service transport temperature, further investigation shall be undertaken and remedial action taken.

For further information, see [A.5.1.](#)

12.5 Quality controls of refrigerated delivery service operations

The refrigerated delivery service provider shall implement procedures for checking that the correct duties (i.e. cleaning, maintenance of cold stores) have been carried out in accordance with the work instructions, operational manuals and other activities conforming to [Clause 10](#). The refrigerated delivery service provider shall define the criteria, method and frequency of each check in accordance with the work instructions (see [10.2](#)) and operational manuals (see [10.4](#) to [10.8](#)).

In the event that one of the parcels contains food products, risk analysis shall be conducted to ensure safety for the consumer.

NOTE The refrigerated delivery service provider can conduct a hazard analysis and critical point (HACCP) study to characterise the hazards and identify the relevant means of control.

The results of the risk analysis shall be recorded in documented information. They shall be reviewed regularly according to a written schedule, as well as every time the context changes in a way that affects the activity and food safety.

Where errors or defects are identified from the results of the checks, further investigation or corrective action shall be undertaken.

NOTE In many cases, the responsible person (see [5.4.2](#)) is likely to be responsible for carrying out the checks. Where appropriate, the results of the checks are documented (for checks regarding cleaning, for example, documentation might not be necessary).

Annex A **(informative)**

Additional guidance for use

A.1 Refrigerated delivery service definition and communications

A.1.1 Additional guidance on the name of the refrigerated delivery service

Agreeing to use a refrigerated delivery service and accepting all the terms and conditions could be made by placing an order online, or in person where the parcel is accepted by the refrigerated service delivery provider. It should be clearly understandable from the refrigerated delivery service name or delivery service description that the transport provided is not within an ambient temperature environment.

A.1.2 Additional guidance on the accepted terms and conditions for refrigerated parcels

Packaging conditions might include, for example, that the delivery service user should package the refrigerated parcel in clean, secure wrapping that contains no tears, prevents leakage and cross-contamination to other refrigerated parcels, and packaging that also prevents odours from escaping, where the contents of the refrigerated parcel have a strong odour. Advice could also be provided regarding the need to protect the contents of the refrigerated parcel and that further information may be sought by the delivery service user through the refrigerated delivery service provider's customer services (see [4.4](#)).

Refrigerated delivery service providers should request that refrigerated parcels are pre-cooled/pre-frozen by the delivery service users prior to handing over their refrigerated parcels to the refrigerated delivery service provider. The pre-cooling/pre-freezing conditions requested by the refrigerated delivery service provider might, for example, be for the delivery service user to confirm the temperature of the refrigerated parcel upon handover to the refrigerated delivery service provider, or for the delivery service user to specify the temperature and length of time within which the refrigerated parcel was kept in a temperature-controlled environment prior to handover to the refrigerated delivery service provider.

A.1.3 Additional guidance on the refrigerated delivery service operation business days and hours

The business days and hours could be published depending on when the refrigerated delivery service operates, for example, 24 h a day, 7 days a week; Monday to Friday from 9:00 am to 5:00 pm; or 365 days a year.

Where the refrigerated delivery service provider accepts a refrigerated parcel but does not leave the acceptance location on the same day, the delivery service user should be made aware of the day/time that the refrigerated parcel is scheduled to depart.

For example, if a refrigerated parcel is accepted after the last refrigerated vehicle of the day has departed, it might not leave the acceptance location until the following day, or, for example, if the refrigerated delivery service provider only provides the refrigerated delivery service on three days a week but accepts refrigerated parcels on five days a week, the refrigerated parcels might remain at the acceptance location on non-delivery days.

A.1.4 Additional guidance on the non-delivery of refrigerated parcels, including holding times, returns and recalls

In the case of recipient absence, the refrigerated delivery service provider might, for example, offer the re-delivery of the refrigerated parcel or collection by the recipient at an operation site. Where this is given as an option, the latest date for re-delivery or collection should be given.

It is normal practice for the refrigerated delivery service provider to define compensation in the event that refrigerated parcels are damaged, go missing, or are not delivered at the service transport temperature or within the conditions offered by the refrigerated delivery service provider.

A recalled refrigerated parcel is one which is in the process of being transported to the recipient, but which has been requested by the delivery service user not to be delivered to the recipients, and instead returned to the delivery service user. This might be because the refrigerated parcel does not contain the correct contents, or it has been sent to the wrong recipient, or it is not of the correct quality, or because the recipient does not want the refrigerated parcel, for example.

A.2 Refrigerated parcels

A.2.1 Additional guidance on the labelling, marking and visible information

The documented information might be in the form of an invoice or shipping form.

It is important to label or mark a refrigerated parcel with the service transport temperature or the name of the refrigerated delivery service, especially when the refrigerated delivery service provider offers refrigerated delivery services for different service transport temperatures, as this can prevent the refrigerated parcels from being handled within the wrong service transport temperature.

It is recommended that, where practicable, the marking or labelling is consistent across all of the refrigerated parcels in a refrigerated delivery service and placed on the most visible surface. This can help to speed up the location of specific refrigerated parcels within the refrigerated delivery service system.

A.2.2 Additional guidance on transferring of refrigerated parcels into a refrigerated enclosure or cold store

For the relevant definition of transfer, refer to [3.19 a](#)).

When placing refrigerated parcels on, or near, other refrigerated parcels in a refrigerated enclosure or cold store, it is important to prevent damage from being caused to any of the refrigerated parcels due to the mass of other refrigerated parcels, the fragility of a refrigerated parcel, or careless handling.

It is advisable to consider using additional refrigeration protection, such as insulated containers, insulated blankets and/or additional cooling materials, when transferring a refrigerated parcel into the refrigerated enclosure or cold store. This should be based on a number of factors such as the time taken to load a refrigerated parcel into the refrigerated enclosure or cold store, and the temperature of the outside air (which could be dependent on time of year and location).

A.2.3 Additional guidance on the transferring of refrigerated parcels between refrigerated enclosures and/ or cold stores

For the relevant definition of transfer, refer to [3.19 b](#)).

Attention is drawn to national legislation and regulations which might affect the transfer requirements of different types of refrigerated parcels.

It is advisable to consider using additional refrigeration protection, such as insulated containers, insulated blankets and/or additional cooling materials, when transferring the refrigerated parcels between refrigerated enclosures and/or cold stores. This should be based on a number of factors

such as the time taken to transfer the refrigerated parcel to the other refrigerated enclosure, and the temperature of the outside air (which could be dependent on the time of year and location).

A.2.4 Additional guidance on the temporary storage of refrigerated parcels in operation sites

A refrigerated parcel might need to be temporarily stored in an operation site, for example, when delivery to a recipient is not possible (see [4.6.7](#)) or between the vehicle schedules for the refrigerated vehicles (see [5.1](#) and [4.6.4](#)).

It is important that temporarily stored refrigerated parcels are continually physically tracked to prevent them from remaining in the operation site for longer than is necessary (for example, the length of holding time defined in [4.6.7](#)). In the event of a non-delivery of a refrigerated parcel, it might, for example, be necessary to redeliver the refrigerated parcel on a certain date or for it to be collected by the recipient by a certain date.

A.2.5 Additional guidance on the delivery to the recipient

Where required within the operational guidelines (see [10.3](#)), additional refrigeration protection, such as insulated containers, insulated blankets and/or additional cooling materials, should be used when delivering a refrigerated parcel from a refrigerated enclosure or cold store to the recipient. This should be based on a number of factors such as the time taken to deliver the refrigerated parcel from the refrigerated enclosure or cold store and the temperature of the outside air (which could be dependent on time of year and location).

To limit the number of failed deliveries of refrigerated parcels, it is recommended that refrigerated delivery service providers communicate with the recipient prior to delivery to advise of a delivery time and provide an opportunity for the recipient to reschedule the delivery time, where practicable.

For the relevant definition of transfer, refer to [3.19 c](#)).

A.3 Conditions for operation sites, refrigerated enclosure, cold stores and cooling materials

A.3.1 General

Refrigerated delivery service providers might use a refrigerated vehicle with a:

- a) body that is able to control its internal temperature; or
- b) thermally insulated container containing a cooling material or mechanical refrigeration capable of maintaining the required temperature conditions (see also [3.3](#), [3.7](#) and [9.4](#)).

Refrigerated enclosures should be able to withstand forces to which they are expected to be subjected in the course of a typical transport journey and built following recognised public standards for insulation (for example, see Reference [\[8\]](#)) to minimise heat transfer.

It is recommended that refrigerated compartments have a structure or protection that prevents the outside air from entering and changing the internal temperature, such as a strip curtain or an air curtain.

In the case of development of own resources, the isothermal equipment which was delivered by such development should be qualified by a competent body, if existing.

A.3.2 Additional guidance on the temperature monitoring of a refrigerated enclosure

The display or indicator of the temperature monitoring instrument might be on the external surface of the refrigerated enclosure, or on the dashboard of a refrigerated vehicle, for example.

Temperature monitoring instruments should be calibrated in accordance with the equipment manufacturer's instructions. The frequency of calibration should also be conducted in accordance with the manufacturer's instructions or advice sought from the manufacturer, where appropriate. Attention is drawn to national legislation and regulations which might cover calibration requirements for temperature monitoring instruments for some refrigerated delivery services.

Wherever practicable, the temperature of refrigerated enclosures should also be checked during transport. This could be through a visible temperature gauge on the dashboard of the refrigerated vehicle, for example, or through periodic checks during which the driver stops to check the temperature of the refrigerated enclosures. Whichever method is used, it should not impede the driving activity or be the cause of danger.

It is also recommended that the temperature of the refrigerated enclosure is checked every time after the refrigerated enclosure has been opened in order to monitor variations in temperature.

It is recommended that at every point of transfer the temperature of the refrigerated enclosure is also recorded and that these records are retained for a defined period of time (for example, 12 months). Attention is drawn to national legislation which might specify a time period for the retention of such records. The temperatures of the refrigerated enclosure may be recorded periodically by hand, or continuously using a temperature recorder, for example.

See also [12.1 i\)](#), [12.3](#), and [Annex B](#) regarding temperature monitoring and recording and classification of the refrigerated delivery service.

Further information regarding temperature recorders or thermometers can be found in EN 12830, EN 13485 and EN 13486.

A.3.3 Additional guidance on the temperature monitoring of cold stores in operation sites

For visibility, the display or indicator of the temperature monitoring instrument might be on the external surface of the cold store.

Temperature monitoring instruments should be calibrated in accordance with the equipment manufacturer's instructions. The frequency of calibration should also be conducted in accordance with the manufacturer's instructions or advice sought from the manufacturer, where appropriate. Attention is drawn to national legislation and regulations which might cover the calibration of temperature monitoring instruments for some refrigerated delivery services.

It is recommended that the temperature of the cold store is checked every time the enclosure is opened. Checking schedules are likely to be dependent on the refrigerated delivery service provider; however, it is advisable that, as a minimum, a check is carried out in the morning, in the afternoon and at the end of the day.

See also [12.1 i\)](#), [12.3](#), and [Annex B](#) regarding temperature monitoring and recording and classification of the refrigerated delivery service.

Further information regarding temperature recorders or thermometers can be found in EN 12830, EN 13485 and EN 13486.

A.3.4 Additional guidance on the cooling materials

It is advisable that the type of cooling material used should be selected according to its duration and effectiveness. Where eutectic plates are selected for use, they should freeze at a lower temperature than the service transport temperature offered by the refrigerated delivery service; however, it is necessary to take into account that eutectic plates freezing at a very low temperature may cause a chilled delivery environment to be lower than its defined service transport temperature. It is also advisable that a process is implemented for the reporting of broken or damaged cooling materials.

See also [10.2.1 g\)](#), [10.4 g\)](#) and [10.7](#) with reference to work instructions and operational manuals.

A.3.5 Additional guidance on the temperature monitoring of cooling material cold stores

It is advisable that the temperature monitoring instrument is visible without opening the cooling material cold store. For example, the display or indicator of the temperature monitoring instrument should be on the external surface of the cooling material cold store.

Temperature monitoring instruments should be calibrated in accordance with the equipment manufacturer's instructions. The frequency of calibration should also be conducted in accordance with the manufacturer's instructions or advice sought from the manufacturer, where appropriate.

The monitored temperatures should be recorded and held for a defined period (for example, 12 months).

Checking schedules are likely to be dependent on the refrigerated delivery service provider; however, it is advisable that, as a minimum, a check is carried out in the morning, in the afternoon and at the end of the day.

A.4 Work instructions and operational manuals

A.4.1 Additional guidance on the operational guidelines for transferring refrigerated parcels

Attention is drawn to national legislation and regulations which might affect the operational processes, temperature control and temperature monitoring requirements of the refrigerated delivery service.

The aim of creating and maintaining operational guidelines is to maintain the integrity of the refrigerated parcel. In the development of the operational guidelines, it is advisable to review factors such as humidity, regional and seasonal temperatures and the characteristics of the temperature-sensitive goods that could be transported within the refrigerated delivery service, for example.

Refrigerated delivery service providers covering the transport of refrigerated parcels containing foodstuff should refer to [Annex B](#) for further information.

"Data" (see [10.3.2](#)) may include electronic and written information, for example.

A.4.2 Additional guidance on the operational manual for cold stores in operation sites

Some types of cold stores (i.e. freezers) operating within freezing service transport temperatures might need to periodically defrost to function correctly. The frequency of defrost should be conducted in accordance with the equipment manufacturer's instructions, or advice sought from the manufacturer, where appropriate.

Humidity can negatively affect the function of cold stores. It is recommended that refrigerated delivery services operating in humid environments reflect the likely impact of this in the frequency of inspections and maintenance included in the operational manual.

A.4.3 Additional guidance on the operational manual for cooling materials

It is advisable that the nature of the cooling material is identified in the operational manual if the cooling material could be hazardous or dangerous in the event of leakage.

If the cooling materials are reusable or able to be used repeatedly by refreezing in cooling material cold stores (for example, eutectic plates), it is important for them to be kept at freezing temperatures for a set period of time. The time for cooling materials to be completely frozen should be conducted in accordance with the manufacturer's instructions or advice sought from the manufacturer, where appropriate.

It is important that cooling materials that are not in their correct state (i.e. frozen, in the case of eutectic plates), are not used in operation. It might be necessary to separate cooling materials within a cooling material cold store, or in a separate cooling material cold store, based on the time at which they were

inserted into it, and their state at the time of insertion, so that staff members are able to easily select the correct cooling materials for use.

A.5 Monitoring and improving the refrigerated delivery service

A.5.1 Additional guidance on the temperature control within the transport network

Testing of the temperature controls and processes might be carried out by sending a test refrigerated parcel through the refrigerated delivery service that contains a temperature data logger to check the consistency of environmental temperatures to which it is subjected. Where test refrigerated parcels are used, the number used for testing should be determined by a sampling method and the number of refrigerated parcels delivered through the transport network, operation sites (see [12.1](#)) and areas for acceptance and delivery to/collection by a recipient (see [4.6.3](#)). Test refrigerated parcels should not be easily identifiable by staff members as a test refrigerated parcel so that they are handled in the same manner as other refrigerated parcels. It is recommended that testing is also conducted if a critical aspect of the transport network, equipment or processes is changed.

Attention is drawn to national legislation which might cover the retention of documents regarding temperature controls and process controls for particular refrigerated delivery service providers.

Annex B (informative)

Considerations for the transport of refrigerated parcels containing foodstuff

B.1 General

In some countries, transporting foodstuff is subject to particular legislation, regulations, rules or industry standards. While this document does not focus specifically on the contents of the refrigerated parcels, these could concern refrigerated delivery services which cover the transport of foodstuff.

For both chilled parcels and frozen parcels containing foodstuff, exposure to ambient temperatures outside of the required service transport temperature for prolonged periods can increase or decrease the temperature of the refrigerated parcel's surface and contents. The less insulating the packaging, or the smaller its volume, or the thinner the foodstuff, the faster any changes in the foodstuff's temperature can occur. These temperature changes can affect the safety or quality of food in either a negative or neutral manner. The physical properties of the foodstuff are also relevant: less dense types of food (for example, ice cream) warm up more rapidly than more solid types of food (for example, frozen meat).

The refrigerated delivery service provider should take account of these factors when transferring all chilled parcels or frozen parcels, and also in the event that a mode of transport fails and chilled parcels or frozen parcels need to be transferred to other refrigerated vehicles en route.

B.2 Traceability

The refrigerated delivery service provider's ability to demonstrate that it has complied with the provisions of its refrigerated delivery service, and, where applicable, that it has complied with relevant legislation or regulations, is often critical in proving due diligence has been undertaken, when required to do so. Such traceability can be demonstrated through data captured, stored and made accessible throughout the refrigerated delivery service process, and it is advisable that a refrigerated delivery service provider considers this within its processes and procedures.

Where foodstuff is being transported and is considered to be part of a food chain, such traceability might be required to demonstrate that there has been compliance with food safety regulations by a product manufacturer, a refrigerated delivery service provider, and/or other agents within the food cold chain.

See [12.3](#) regarding the categorization of levels of temperature monitoring and temperature recording.

The traceability of feed and food chain is covered by ISO 22005.

B.3 Chilled parcels containing foodstuff

For a chilled parcel containing foodstuff, exposure to ambient temperatures that are higher than the applicable service transport temperatures for prolonged periods could lead to chilled parcel surface temperatures and the temperature of its contents increasing enough to allow pathogenic microorganisms to grow and to pose a food safety risk. In general, the greater the temperature difference between the chilled parcel contents and the environment, the faster this process could occur. However, the rate of temperature change of the contents of a chilled parcel is dependent on various factors, such as the packaging conditions and material(s) surrounding the foodstuff, exposure time to ambient temperature, and the physical properties of foodstuff being transported. Exposure to ambient temperatures lower than 0 °C could lead to surface freezing of the chilled parcel and its contents with consequent effects on the quality of the chilled food.

B.4 Frozen parcels containing foodstuff

For frozen parcels containing foodstuff, exposure to ambient temperatures higher than the applicable service transport temperatures for prolonged periods could also lead to the temperature of the frozen parcel surface and foodstuff increasing enough to thaw. This could allow pathogenic microorganisms to grow and pose a food safety risk. In general, the greater the temperature difference between the frozen parcel contents and the environment, the faster this process could occur. Similarly to chilled parcels, the rate of temperature change of the contents of a frozen parcel is dependent on various factors, such as the packaging conditions and material(s) surrounding the foodstuff, the time it is exposed to ambient temperatures, and the type of foodstuff being transported.

There is also the additional risk that when frozen foodstuff thaws, it produces liquid, which could leak and cause cross-contamination to other frozen parcels if the packaging surrounding the foodstuff is not water-tight. In the UK and Europe, exposure to ambient temperatures lower than $-18\text{ }^{\circ}\text{C}$ is generally considered to have no effect on the frozen food's quality.

Refrigerated delivery service providers are advised to seek information and guidance (for example, regarding cross-contamination, the impact of environmental temperatures on internal refrigerated parcel temperatures and the rate of temperature change of the refrigerated parcel and its contents, and the impact of packaging types) from relevant industry associations and professional bodies (for example, refrigerated warehousing associations, cold chain professional bodies and logistics organizations), where appropriate.

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- [7] ISO/IEC 17025, *General requirements for the competence of testing and calibration laboratories*
- [8] ECONOMIC COMMISSION FOR EUROPE. ¹⁾ INLAND TRANSPORT COMMITTEE ATP- Agreement on the International Carriage of Perishable Foodstuffs and on the Special Equipment to be Used for such Carriage. United Nations: New York and Geneva

1) At the time of publication, this document can be downloaded from the United Nations Economic Commission for Europe (UNECE) website, <https://www.unece.org/trans/main/wp11/atp.html>.

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