ISO/TC 315 "Cold chain logistics"
Secretariat: **JISC**
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ISO 31511- Committee Draft (CD) consultation

Document type	Related content	Document date	Expected action
Project / Draft	Project: ISO/WD 31511	2023-05-29	**COMMENT/REPLY** by 2023-07-25

Description

Dear member,

I'm pleased to inform you that the commenting period for CD 31511 starts on May 31, 2023.

MBs are invited to submit comments via the e-balloting portal by July 25, 2023.

Thank you in advance for your cooperation.

Best regards,

Yukiko

Yukiko Mizuno

ISO/TC 315 Committee Manager

ISO 31511:####(X)

ISO TC 315/ WG 2

Date: YYYY-MM-DD

Requirements for contactless delivery services in cold chain logistics

CD stage

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A model manuscript of a draft International Standard (known as "The Rice Model") is available at https://www.iso.org/iso/model_document-rice_model.pdf

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Foreword

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This document was prepared by Technical Committee ISO/TC 315, *Cold chain logistics*, WG 2, *Contactless delivery*.

A list of all parts in the ISO ##### series can be found on the ISO website.

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

Contactless delivery services can reduce directly face-to-face contact between personnel in logistics. Contactless delivery service is a great help for people requiring the company's services but worrying about the infection spreading and foodborne illness.

Contactless delivery services in cold chain logistics can be standardized to avoid face-to-face contact, effectively prevent and control the spread of virus infection, and protect the health of consumers.

This document specifies the requirements for refrigerated delivery service providers to deliver goods through contactless cold chain depending on customers' needs, including the requirements for the refrigerated delivery service providers, the requirements for facilities and equipment involved in contactless refrigerated delivery, the operation process and requirements of contactless refrigerated delivery, and the handling of abnormal condition.

Requirements for contactless delivery services in cold chain logistics

1 Scope

This document specifies the requirements for refrigerated delivery service providers to deliver goods directly from the last contactless refrigerated goods operation area at distribution centre (3.6) to a recipient (transfer of goods between distribution centres is excluded) through contactless cold chain depending on customers' needs, including the requirements for the refrigerated delivery service providers, the requirements for facilities and equipment involved in contactless refrigerated delivery, the operation process and requirements of contactless refrigerated delivery, and the handling of abnormal condition.

This document is applicable to contactless delivery through cold chain. This standard is also applicable to scenarios that need to carry out contactless cold chain delivery under special circumstances such as epidemic.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 23412:2020, *Indirect, temperature-controlled refrigerated delivery services — Land transport of parcels with intermediate transfer*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 23412 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp
— IEC Electropedia: available at https://www.electropedia.org/

3.1
refrigerated goods
goods with original packaging or transportation packaging that have been refrigerated to within a defined service delivery temperature specified by the refrigerated delivery service provider (3.2) and agreed by service users in order to be carried or sent by the refrigerated delivery service

Note 1 to entry: refrigerated goods includes both chilled goods and frozen goods.

3.2
refrigerated delivery service provider
company or organization providing the refrigerated delivery services

[Source: ISO 23412, 3.12]

3.3
contactless
condition that there is no direct contact between persons by wearing masks, gloves and other isolation devices or keeping a safe distance from each other when they are working on the same refrigerated goods and people's body do not directly touch the refrigerated good’s own packing or its transportation

packaging of refrigerated goods by wearing masks, gloves and other isolation devices or keeping a safe distance from refrigerated goods, etc. during the delivery of the refrigerated goods.

3.4
contactless refrigerated delivery
logistics activity of delivering goods directly from the last contactless refrigerated goods operation area of distribution centre (3.7) to a recipient in a contactless manner within a required temperature range

Note 1 to entry: Transfer of goods between distribution centres is excluded.

3.5
thermally insulated container
mobile container constructed to reduce the rate of heat transmission, in which temperature can be controlled and accommodate multiple refrigerated goods in the process of being delivered

Note 1 to entry: Thermally insulated containers include power and nonpower thermally insulated containers for refrigeration purpose. Power thermally insulated containers can be used by charging or connecting to power supply. Nonpower thermally insulated containers do not require power for refrigeration.

[Source: ISO 23412, 3.7, modified]

3.6
distribution centre
the last site before delivery to recipients, with functions of receiving, storage and delivery of refrigerated goods

3.7
operation area
area exclusively set up by the refrigerated delivery service providers to deal with contactless refrigerated goods at distribution centre, which includes loading and unloading area, channel of incoming and outgoing, storage area of refrigerated goods, related facilities and equipment

3.8
loading area
one part of operation area which is only used to load the contactless refrigerated goods

3.9
unloading area
one part of operation area which is only used to unload the contactless refrigerated goods

3.10
channel of incoming and outgoing
channel of operation area which is only used for the contactless refrigerated goods into/out from storage area.

3.11
storage area
a part of operation area which is used to store the contactless refrigerated goods

3.12
self-service pick-up cabinet
logistics terminal facilities with self-service pick-up function and low-temperature store function, set up around the community or the residential buildings which is close to recipient

3.13
contactless delivery service user
person or organization who requests a contactless refrigerated delivery service and agrees to its terms and conditions in order to send a contactless refrigerated goods to a recipient

[Source: ISO 23412, 3.4, modified]

4 Requirements for contactless refrigerated delivery service providers

4.1 The contactless refrigerated delivery service provider shall:

a) have a refrigerated delivery service description that clearly describes that the refrigerated delivery service provides the temperature-controlled delivery of refrigerated goods;

b) implement a procedure to check the presence and the validity of the business licence(s) or the documentation, and to undertake further action which is necessary for the refrigerated delivery service provider to obtain a business licence(s) to operate a refrigerated delivery service;

c) 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 goods recipients might have;

d) determine their terms and conditions for delivery of refrigerated goods, including, as a minimum, their maximum size, maximum mass, packaging conditions, and pre-cooling/pre-freezing conditions by the delivery service users;

e) define the items not accepted and a list of prohibited items might be prohibited by law, and/or items not accepted by the refrigerated delivery service provider for delivery.

4.2 The contactless refrigerated delivery service provider shall establish a system for contactless refrigerated delivery service, including but not limited to:

a) facilities and devices management system: it shall define the equipment of facilities and devices and the measures to be taken to ensure normal operation of contactless facilities and devices;

b) information management system: it shall be able to ensure that the handover information (including temperature of the refrigerated goods, contactless measures taken to load the refrigerated goods, etc.) in the process of contactless refrigerated delivery can be recorded on the information management system, and the functions of information inquiry and traceability, customer feedback, abnormalities warning, etc. can be available; the contactless refrigerated delivery service provider shall also ensure customer information security, and shall not disclose data involving consumers to third parties; paper records regarding relevant information in the delivery process shall be filed immediately, and according electronic records shall be backed up immediately, and paper and electronic records shall be kept for a period in accordance with relevant regulations;

c) contactless management system: it shall define the measures to be taken to ensure that there is no direct contact between persons when they work on a same refrigerated goods and people's body do not directly touch the refrigerated good's own packing or its transportation packaging throughout the process of contactless refrigerated delivery;

d) hygiene management system: it shall define the hygiene requirements for the areas involving contactless refrigerated delivery, and the cleaning, disinfection and other requirements to meet the hygiene requirements;

e) traceability management system: it shall establish a traceability of information management platform to ensure the contactless measures taken during the process of delivery should be recorded and can be traceable.

4.3 Refrigerated delivery service providers should set an operation area exclusively to deal with contactless refrigerated goods at distribution centre, which includes:

a) loading and unloading area;

b) channel of incoming and outgoing (3.10);

c) storage area of refrigerated goods;

d) related facilities and equipment.

If the operation area is mix-used for both contactless refrigerated goods and non-contactless refrigerated goods the area shall be disinfected and isolated prior to each contactless delivery operation.

When the refrigerated goods arrive at distribution centre they should be unloaded at the loading area **(4.3 a))** and be transported to/from the storage area **(4.3 c))** through the channel of incoming and outgoing **(4.3 b))** . The refrigerated goods should be disinfected while unloading after they arrive at distribution centre. The material used for the disinfection should be selected to unsure to not tampering organoleptic quality of the goods.

5 Facilities and equipment for contactless refrigerated delivery

5.1 General requirements

5.1.1 Refrigerated delivery service providers shall provide facilities and equipment to realize that there is no direct contact between persons when they are working on the same refrigerated goods and people's body do not directly touch the refrigerated good's own packing or its transportation packaging when receive, store and transport refrigerated goods within operation area or delivery of refrigerated goods from operation area of distribution centre to recipient.

5.1.2 The facilities and equipment should be used exclusively for contactless refrigerated delivery. The facilities and equipment shall be disinfected before each use.

5.2 Facilities and equipment at operation area

5.2.1 Operation area should be provided with automated handing facilities and equipment as much as possible. Automated handing facilities and equipment includes loading, unloading, sorting, stacking and temperature detection devices, etc. Automated handing facilities and equipment operation should be firstly used rather than manual.

5.2.2 Operation area shall be provided with adequate protective equipment. Protective equipment includes protective suits, gloves, masks, etc. Protective equipment can be disposable and discarded after one operation; it can also be reused. For multiple use, it shall be cleaned and disinfected after use **(5.2.3)**, and it shall be discarded if it fails to meet the requirements of contactless delivery.

5.2.3 Operation area can be provided with disinfection materials covering physical disinfection and chemical disinfection, and the storage area and the materials, facilities and equipment in the storage area can be disinfected according to the hygiene management system **(4.2 d))**. Disinfection records can be kept for a period in accordance to relevant regulations. Physical disinfection materials include but are not limited to ultraviolet disinfection, plasma disinfection, microwave disinfection lights, etc. Chemical disinfection materials include but are not limited to chlorine-containing disinfectants, ozone, ethanol and other disinfectants. The storage of chemical disinfection materials shall comply with relevant regulations.

5.3 Delivery vehicle

5.3.1 The vehicles used for delivery of refrigerated goods from operation area to recipient can be refrigerated vehicles and non-refrigerated vehicle. Refrigerated delivery service provider shall be guaranteed that refrigerated goods meet the temperature and contactless requirements agreed between he and delivery service user in the process of delivery. Temperature requirement of a refrigerated vehicle and non-refrigerated vehicle shall comply with ISO 23412, 9.2.

5.3.2 A refrigerated vehicles exclusively used for contactless refrigerated delivery should be provided. The transport vehicle shall be cleaned and disinfected before each loading of contactless refrigerated goods. The same transport vehicle shall not be used to transport contactless refrigerated goods and non-contactless refrigerated goods at the same time.

5.3.3 The inside wall of delivery vehicle shall be flat, clean, non-toxic, harmless, odor-free and pollution-free, shall be cleaned and disinfected regularly and be cleaned and disinfected after each delivery.

5.3.4 When non-refrigerated vehicle are to be used for contactless refrigerated delivery, thermally insulated container (5.4) shall be used.

5.4 Thermally insulated container

5.4.1 General requirements

5.4.1.1 The thermally insulated container shall have the function of thermal insulation or refrigeration, which can meet the needs of refrigerated delivery service. Thermally insulated containers include power and nonpower thermally insulated containers for refrigeration purpose.

The refrigerated delivery service provider shall provide a calibrated temperature monitoring instrument into the thermally insulated container to monitor its internal temperature. The internal temperature measured by the temperature monitoring instrument should be visible during delivery.

The temperature inside the thermally insulated container shall be checked and recorded and these records retained for a defined period of time (for example, 12 months).

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

5.4.1.2 The thermally insulated container shall be flat, clean, non-toxic, harmless, odor-free and pollution-free, and shall be cleaned and disinfected regularly and should be cleaned and disinfected after/before each use.

5.4.1.3 A thermally insulated container should be equipped specifically for contactless refrigerated delivery. If it is necessary to use the same thermally insulated container in turn with the non-contactless refrigerated delivered goods, the thermally insulated container shall be cleaned and disinfected before use. The same thermally insulated container shall not be used to delivery contactless refrigerated goods and non-contactless refrigerated goods at the same time.

5.4.2 Nonpower thermally insulated container

If a nonpower thermally insulated container is used for delivery, cooling materials **(5.5)** shall be placed in the thermally insulated container.

5.5 Cooling materials

5.5.1 Cooling materials may include but not limited to dry ice, ice bags, ice boxes, etc. Cooling materials shall:

a) meet the requirements of ISO 23412, 9.4;

b) ensure that the storage in the thermally insulated container will not cause damage to the refrigerated goods;

c) be cleaned and disinfected before storage;

d) be cleaned and disinfected before and after each use.

5.5.2 The storage of cooling materials shall comply with ISO 23412 9.5.

5.5.3 Automatic loading and unloading equipment should be used as much as possible when putting/taking out the cooling materials into/from the thermally insulated container. If manual operation is required, the staff shall at least wear gloves, masks, etc. to ensure that his body will not directly contact the cooling materials.

5.6 Self-service pick-up cabinet

The refrigerated delivery service provider may provide self-service pick-up cabinet. The self-service pick-up cabinet shall:

a) have the refrigeration functions suitable for the storage of refrigerated goods, which may realize rapid conversion of different functions and temperatures;

b) have the corresponding functions of networking and real-time information transmission, can monitor and record the temperature in real time, alarm when the temperature is abnormal, monitor the opening and closing of the cabinet and transmit information in real time;

c) shall meet the requirements of safety and video monitoring.

d) should have the function of scanning code for opening as far as possible to avoid direct contact between personnel and itself.

6 Requirements for the operation of contactless refrigerated delivery

6.1 Handover

6.1.1 Loading and handover of refrigerated good

6.1.1.1 Automatic loading equipment should be used as far as possible to load the refrigerated goods into delivery vehicles. If it is necessary to manually put refrigerated goods into delivery vehicles, it shall ensure that there is no contact between the handover personnel, between the handover personnel and the refrigerated goods by wearing gloves, masks, etc. when lifting, lowering or placing refrigerated goods.

6.1.1.2 After the refrigerated goods are loaded into the delivery vehicle, the handover parties shall confirm the information listed below but not limited to:

a) temperature of the loaded refrigerated goods;

b) contactless measures taken to load the refrigerated goods.

The handover parties can confirm the above information through visual information tools without meeting each other directly. Also, the handover can also be carried out by at least wearing gloves, masks and other contactless methods. After both parties confirm the handover information, the handover information shall be uploaded in the information management system **(4.2 b))** .

6.1.2 Unloading and handover of refrigerated goods

6.1.2.1 Automatic unloading equipment should be used as far as possible to unload refrigerated goods from delivery vehicles. If it is necessary to manually unload refrigerated goods from transport vehicles, it shall ensure that there is no contact between the handover personnel, between the handover personnel and the refrigerated goods by wearing gloves, masks and so on.

6.1.2.2 After the refrigerated goods are unloaded from delivery vehicles, both parties shall confirm the temperature, state and quantity of the refrigerated goods, etc. The handover parties can confirm the handover of refrigerated goods through visual information tools without meeting each other directly; the handover can also be carried out by at least wearing gloves, masks and other contactless methods. After both parties confirm the handover, the handover information shall be uploaded in the information management system **(4.2 b))**.

6.1.3 Loading and handover of thermally insulated container

6.1.3.1 The refrigerated goods should be put into thermally insulated containers by means of mechanical arms, etc. as far as possible. If it is necessary to manually put refrigerated goods into the thermally insulated containers, the handover personnel shall at least wear gloves, masks, etc., and it

shall ensure that there is no contact between the handover personnel, between the handover personnel and refrigerated goods, and between refrigerated goods.

6.1.3.2 After the refrigerated goods are put into thermally insulated containers, both parties shall confirm the temperature, state and quantity of the refrigerated goods. The handover parties can confirm the handover of refrigerated goods through visual information tools without meeting each other directly; the handover can also be carried out by at least wearing gloves, masks and other contactless methods. After both parties confirm the handover, the handover information shall be uploaded in the information management system **(4.2 b))** .

6.1.4 Unloading and handover of thermally insulated container

6.1.4.1 Refrigerated goods should be taken out of thermally insulated containers by means of mechanical arm, etc. as far as possible. If it is necessary to manually take out the refrigerated goods from the thermally insulated containers, the handover personnel shall at least wear gloves, masks, etc., and it shall ensure that there is no contact between the handover personnel, between the handover personnel and the refrigerated goods, and between the refrigerated goods.

6.1.4.2 After taking out the refrigerated goods from the thermally insulated container, both parties shall confirm the temperature, state and quantity of the refrigerated goods. The handover parties can confirm the handover of refrigerated goods through visual information tools without meeting each other directly; the handover can also be carried out by at least wearing gloves, masks and other contactless methods. After both parties confirm the handover, the handover information shall be uploaded in the information management system **(4.2 b))** .

6.2 Receiving and storage at distribution centre

6.2.1 General requirements

6.2.1.1 When the refrigerated goods arrive at the distribution centre it shall be unloaded at the unloading area and be transported to the storage area through the incoming channel. The storage area shall be separated from the non-contactless refrigerated goods storage area, and shall be located in an independent physical area. The incoming channel and unloading area of contactless refrigerated goods should be independent.

6.2.1.2 When refrigerated goods are unloaded, sorted, stacked and tested for temperature at operation area of distribution centre, it shall ensure that there is no contact between personnel, between personnel and refrigerated goods.

6.2.2 Receiving of goods

6.2.2.1 Unloading should be carried out at the unloading area of distribution centre. After the refrigerated goods be unloaded it shall be disinfected and moved immediately to the storage area through the incoming channel to storage area. If the unloading area and incoming channel are used both for contactless and non-contactless refrigerated goods, it shall ensure that whenever it is used for contactless refrigerated goods it shall be cleaned and disinfected and be used exclusively.

6.2.2.2 The unloading and handover of refrigerated goods at unloading area shall meet the requirements of 6.1.2.

6.2.2.3 After receiving the refrigerated goods, outer packaging surface of each refrigerated goods should be disinfected. It should use automatic disinfection means as far as possible. The material used for the disinfection should be selected to unsure to not tampering organoleptic quality of the goods.

The refrigerated goods shall be isolated unloaded, moved and stored solely or be isolated by using isolation equipment (5.2.4) if the refrigerated service provider and the services user agreed to deliver it solely.

6.2.3 Storage

6.2.3.1 The refrigerated goods can be stored at the storage area of distribution centre that can be temperature controlled within the service delivery temperature. The temperature of the storage area shall be monitored and recorded regularly.

6.2.3.2 The storage area shall be disinfected regularly (for example, 24 hours). When the new refrigerated goods arrive, they shall be disinfected. The disinfection should be recorded to the information management system (**4.2 b**)). The record shall be kept for a period in accordance with relevant regulations and can be traceable.

6.2.3.3 Intelligent sorting and stacking equipment and other automatic equipment should be equipped to automatically sort and stack the goods as far as possible. When manual sorting and stacking are needed, sorting personnel shall at least wear gloves and masks, etc. to avoid their body directly touch the refrigerated goods or direct contact between persons.

6.3 Delivery

6.3.1 Preparation before delivery

The delivery vehicle, thermally insulated container and cooling materials that need to be used to load refrigerated goods shall be arranged according to the order attribute, recipient address and other elements as well as related facilities and equipment (**5.2**).

6.3.2 Loading at distribution centre

6.3.2.1 Loading should be carried out at the loading area of distribution centre. The refrigerated goods shall be delivered from storage area to the delivery vehicle through the outcoming channel. If the loading area and outcoming channel are used both for contactless and non-contactless refrigerated goods, it shall ensure that whenever it is used for contactless refrigerated goods it shall be cleaned and disinfected and be used exclusively.

6.3.2.2 In case of delivery by refrigerated vehicle, loading and handover of refrigerated goods shall be carried out according to the requirements of **6.1.1**.

6.3.2.3 In case of delivery by thermally insulated containers, loading and handover of refrigerated goods shall be carried out according to the requirements of **6.1.3**.

6.3.2.4 When placing refrigerated goods in refrigerated vehicles or thermally insulated container, the principle of putting what is delivered first on the outside and what is delivered later on the inside should be followed to avoid touching the refrigerated good's own packing or its transportation packing as far as possible.

6.3.2.5 The refrigerated goods shall be isolated delivered and loaded or be isolated by using isolation equipment(5.2.4) if the refrigerated service provider and the services user agreed to deliver it solely.

6.3.3 Delivery process

6.3.3.1 It shall ensure that the refrigerated goods are within the required temperature range according to the agreement between refrigerated delivery service provider and contactless delivery service user, and a reasonable delivery route shall be selected.

6.3.3.2 During delivery process, the refrigerated vehicle or thermally insulated container shall not be opened, and refrigerated goods shall not be in contact with the external environment.

6.4 Consign

6.4.1 Reception

6.4.1.1 The refrigerated goods shall be delivered to the designated place according to the agreed time with the recipient.

6.4.1.2 In case of delivery by refrigerated vehicle, unloading and handover of refrigerated goods shall be carried out according to the requirements of 6.1.2.

6.4.1.3 In case of delivery by thermally insulated containers, unloading and handover of refrigerated goods shall be carried out according to the requirements of 6.1.4.

6.4.2 Commissioned collection

6.4.2.1 If the recipient cannot receive the goods directly and agrees to receive them by commissioned collection, the following procedures shall be followed:

a) The deliveryman shall contact the collection agent before delivery;

b) The deliveryman shall delivery the refrigerated goods to the place according to the agreed time with the collection agent;

c) The deliveryman shall verify whether the information provided by the collection agent is consistent with that provided by the recipient. If the information is consistent, it shall be carried out according to **6.4.1.2** to **6.4.1.3**.

6.4.2.2 After the collection agent receives the delivery, the deliveryman shall inform the recipient of the collection by telephone or message.

6.4.3 Storage and taking by self-service pick-up cabinet

6.4.3.1 If the recipient cannot receive the goods directly and agrees to put them in the self-service pick-up cabinet, the refrigerated goods can be delivered by using of self-service pick-up cabinet.

6.4.3.2 The deliveryman shall put the refrigerated goods in the nearest self-service pick-up cabinet to the recipient according to the agreed time with the recipient, and the self-service pick-up cabinet shall meet the requirements of **5.6**.

6.4.3.3 Deliveryman shall wear masks and gloves when putting refrigerated goods into the self-service pick-up cabinet. The deliveryman shall disinfect the self-service pick-up cabinet before using it to store refrigerated goods. Disinfection methods can be sprayed with alcohol, wiped with paper towels or rags with disinfectant, etc.

6.4.3.4 After the storage is completed, the deliveryman shall upload the refrigerated goods' information into the information management system**(4.2 b))**,and inform the recipient of the storage situation, and remind the recipient to pick up the refrigerated goods in time.

6.4.3.5 After the recipient opens the cabinet and picks up the goods, the networking function of the self-service pick-up cabinet shall be able to upload the picking information into the information management system **(4.2 b))** in time, and the delivery is completed.

6.5 Failure of delivery

6.5.1 If the recipient or collection agent does not actually receive the delivery, the refrigerated goods shall be sent back to the distribution centre and the next delivery shall be arranged in the limit of the date agreed by the refrigerated delivery service provider and contactless delivery service user, and within the limit of the use by date of the goods.

6.5.2 In the case of 6.5.1, the deliveryman shall deliver the refrigerated goods back to the distribution centre according to the requirements of 6.3.3. Then the refrigerated goods shall be unloaded and stored before next delivery.

In the case of delivery by refrigerated vehicle, unloading and handover of refrigerated goods shall be carried out according to the requirements of 6.1.2. In case of delivery by thermally insulated containers, unloading and handover of refrigerated goods shall be carried out according to the requirements of 6.1.4.

The receiving and storage shall comply with the requirements of 6.2.

6.5.3 The deliveryman shall upload the information of this delivery (including the situation in **6.5.2**, reasons for unsuccessful delivery, etc.) to the information management system **(4.2 b))**.

6.6 Return

6.6.1 If after the service time limit, the refrigerated service provider cannot contact the recipient or, after contact with the recipient, the recipient expressly refuses to receive, the deliveryman shall:

a) contact the contactless delivery service user whether return or keep delivering. If the contactless delivery service user is willing to return or keep delivering, they shall negotiate the delivery method and delivery cost of return or next delivery. If the contactless delivery service user disagrees with the return, he/she will be informed that it will be carried out according to 9;

b) record the delivery, storage, storage temperature and return reasons of refrigerated goods in the information management system **(4.2 b))**.

6.6.2 In the case of **6.6.1**, if the contactless delivery service user still requires contactless refrigerated delivery, it shall be carried out according to **6.2** to **6.4**.

7 Information record

Refrigerated delivery service provider shall establish an information platform to record the temperature of refrigerated goods, contactless measures taken during the process of delivery, etc., as a minimum:

a) at the point of receiving and storage at distribution centre;

b) at the start and end of delivery process;

c) at the point of consign.

8 Traceability

Contactless refrigerated delivery service providers shall provide traceability for customers to trace the information during delivery**,** which may include, but is not limited to ambient temperature of refrigerated goods, contactless measures taken during delivery, etc., depending on the agreement between the refrigerated delivery service providers and the refrigerated delivery service users.

9 Handling of abnormal conditions

Refrigerated delivery service providers shall agree with contactless delivery service user on abnormal scenarios and how to handle them. Abnormal scenarios can include damage, loss, abnormal temperature, contact between the contactless refrigerated goods with the external environment and other problems during the delivery of refrigerated goods. The refrigerated delivery service provider shall investigate and find the root cause and negotiate with customers.

10 Service evaluation and quality management

The refrigerated delivery service provider shall:

a) provide the entrance of service evaluation for customers to evaluate the contactless refrigerated delivery service;

b) make statistics, analysis and evaluation on the contactless distribution service opinions fed back by customers on the refrigerated delivery information management platform, deal with the problems and continuously improve the service quality.