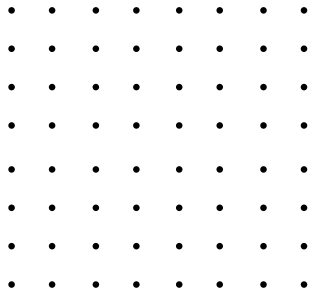


IGLOOCAR[®]



INSTRUCTION MANUAL



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1 INTRODUCTION

The purpose of this OPERATING INSTRUCTIONS is to acquaint the User with the principles of correct operation and maintenance of the specialized vehicle body manufactured by IGLOOCAR Sp. z o.o.

All vehicle body types manufactured at IGLOOCAR Sp. z o.o. They are mounted only on car chassis, trailers and semi-trailers factory-adapted for this type of vehicle body.

Depending on the type and the customer's needs and wishes, these bodies may be additionally equipped with refrigerating units and self-loading lifts, which are products of specialized companies

Therefore, the following documents apply in conjunction with this INSTRUCTION MANUAL:

- Vehicle Body's Warranty Card,
- Warranty Book and instruction manual for the chassis used for vehicle body,
- Warranty Book and instruction manual for the refrigerating unit (if supplied),
- Warranty Book and instruction manual for the self-loading lift (if supplied)

NOTE:

- IGLOOCAR Sp. z o.o. reserves the right to make constructional and technological changes aimed at modernizing the product and improving its functional properties without prior notice
- The information contained in this instruction manual describes more than one model and version, therefore some of the items listed may not be relevant to your vehicle body

2 MARKINGS

2.1 All vehicle body's identification data can be found on the nameplate, inside the loading chamber, located depending on the type:

- on the right-hand side wall, next to the back door at the top - on Cold Stores, Isotherms and Vans,
- on the left-hand side wall, top front - in the Icehouses,
- on the front wall, on the left-hand side, at the top, - in Special Vehicle Body for the Transport of Beverages

2.2 The following sections of the bodywork nameplate are described:

BODYWORK - refers to the type of bodywork:

COLD STORE (C) - refrigerated body,

IZOTERMA (I) - isothermal body,

ICEHOUSE (L) - body for the distribution of ice cream,

VAN (F) - general purpose van,

FOR THE TRANSPORT OF BEVERAGES (W) - special body for the transport of beverages,

TYPE - stands for the type of vehicle body according to the manufacturer along with the chassis code:

C xxx - refrigerated body,

I xxx - isothermal body,

L xxx - body for the distribution of ice cream,

F xxx - general purpose van,

W xxx - special body for the transport of beverages,

The chassis code marking (xxx - two or three digits) is an internal (according to IGLOOCAR) marking of the brand and type of chassis built.

VERSION - marks the equipment version:

D - body fitted with a single-leaf side door

H - body equipped with a hook system for hanging cargo

L - body with polyester/glass laminate sheathing

WEIGHT - indicates the weight of the body in kg (without accessories, e.g. refrigerating unit, lift, etc.).

FABRIC NUMBER - Manufacturer's body number (nine digits)

YEAR OF MANUF. - marks the year in which the vehicle body was manufactured

KJ-SIGN - marks Quality Control Confirmation

2.3 Example of writing on the vehicle body nameplate:

VEHICLE BODY - COLD STORE

TYPE - C 40

VERSION - D

WEIGHT - 1700 kg

FACTORY NO. - 110023522

YR. OF MANUF. - 2022

KJ-SIGN - KJ 4

2.4 In the event of a repair or renovation, or if a claim is to be made, the following identification data must be provided to the SERVICE DEPARTMENT from the bodywork nameplate:

- BODYWORK,
- TYPE,
- VERSION,
- FACTORY NO.
- YEAR OF MANUF.
and from the Bodywork Warranty Card
- DATE OF BODYWORK PURCHASE

3 OVERVIEW

3.1 DRIVING

The traction characteristics of an IGLOOCAR specialized vehicle body are significantly different from, for example, heavy-loaded lorry, due to the higher center of gravity. Therefore, the driver should perform a test drive, both empty and loaded, to familiarize himself with the characteristics of the vehicle before operating it.

Particular care should be taken in the following cases:

- descents from the hills,
- sharp curves,
- driving with a cargo on the hook,
- driving in bad weather conditions (slippery road, strong wind),
- driving a combination vehicle (car and trailer),
- passing through areas with limited height,
- sudden manoeuvres (e.g. braking, avoiding) should be avoided

3.2 LOADING AND UNLOADING

- Before loading and unloading, the vehicle must be positioned as far as possible on a level, horizontal surface; this applies **in particular to special bodies for the transport of beverages**
- Whenever groceries are loaded, loading chamber should be thoroughly ventilated
- When loading, care should be taken to ensure that the load is evenly distributed in relation to the longitudinal axis of the vehicle and that the entire vehicle body's floor area is used
- Cargo in refrigerated bodies should be laid out in such a way as to allow free flow of cold air to the load leaving cold air ducts to cover as much of the load as possible
- The cargo must be properly distributed and secured to prevent uncontrolled movement while the vehicle is being driven and to ensure that the permissible axle loads of the vehicle are not exceeded
- When loading and unloading the goods, care must be taken not to cause damage to the interior sheathing of the bodywork (walls, floors, doors)

Mechanical loading and unloading:

- forklift truck access is allowed regardless of the type of floor finish, only in EURO standard vehicle bodies (interior bodywork width is 2,46 m)
- access with a hand pallet truck is only permitted in vehicle bodies with an interior width of over 2200 mm with a sheet-metal floor
- **IT IS FORBIDDEN TO EXCEED THE MAXIMUM LOAD OF THE VEHICLE !!!**
- **DO NOT OVERLOAD, MOVE, PUSH, etc. CARGO DIRECTLY ON THE VEHICLE BODY FLOOR !!!**

4 TECHNICAL MAINTENANCE

4.1 TECHNICAL INSPECTIONS OF VEHICLE BODY

The vehicle body for which the Guarantor has issued a warranty is subject to technical inspection.

The scope of the inspection includes checking:

- body varnish coating (possible touch-up painting, maintenance of sheathing)
- the intermediate frame of the vehicle body and the components of the chassis assembly (painting, maintenance, complete inspection
- of the chassis fastenings)
- sealing of the vehicle body (possible restoration or replacement)
- back and side doors and flaps (adjustment and maintenance of fittings, possible replacement of damaged seals)
- standard and additional equipment (bumpers, flooring, hooks, etc. as well as the installation of a refrigerating unit, a self-loading lift, heating equipment, etc.)

4.2 ORDINARY SERVICE AND MAINTENANCE OF VEHICLE BODY

4.2.1 This scope includes activities that can be carried out by the user himself/herself.

Check the tightness of the bodywork fasteners periodically. If the screws become loose, loosen them, clean the threads and coat them with thread fixing adhesive (e.g. Loctite 5776 or similar). Then, reinstall the bolts, tightening them to the torque values in the table.

A2, A4 screws for fixing door fittings (hinges, bolts, bolt sockets):

| Lock dimension | Tightening torque [Nm] |
|----------------|------------------------|
| M8 | 12 |
| M10 | 23 |

Screws securing the intermediate frame to chassis:

| Lock dimension | Tightening torque [Nm] $\pm 10\%$ |
|----------------|-----------------------------------|
| M10 | 75 |
| M12 | 106 |
| M14 | 170 |
| M16 | 260 |

Screws securing the intermediate frame to the chamber:

| Lock dimension | Tightening torque [Nm] $\pm 5\%$ |
|----------------|----------------------------------|
| M12 | 60 |
| M14 | 110 |

4.2.2 CLEANING AND MAINTENANCE OF VEHICLE BODY

The vehicle body, especially the interior, must be kept absolutely clean. It is advisable to wash the bodywork and its fittings with water at a temperature of max. 40°C (can be under low pressure) with generally available car shampoos. For external washing, use car wax shampoo and a special brush with soft bristles. The vehicle should preferably be placed on a slightly sloping ground with its back down so that the water can flow freely out of its interior.

After washing, the interior of the bodywork should be thoroughly dried.

It is not permissible to wash the vehicle body at ambient temperatures below 0°C.

It is recommended to maintain the sheathing at least twice a year. **After washing, do not maintain the interior's sheathing.**

DOOR FITTINGS: Maintenance of fittings (e.g. handles, bolts, hinges, door frame, etc.), and other elements of vehicle body made of stainless steel, or aluminum alloys, should be carried out with agents intended for this type of surface, following the recommendations of the manufacturer of the preparation used. Maintenance of fittings and equipment should be carried out after each cleaning with shampoos, at least EVERY 3 months, or as recommended by the manufacturer of the protection product.

Lubricate mating parts (e.g. hinges, panel locks, bolts, latches, etc.) with grease at least once every three months. The back and side door lock inserts are recommended to be lubricated periodically with a product such as WD-40, and every 2-3 months in autumn and winter. Periodically maintain the door seals and their contact points with the frame with silicone oil or technical petroleum jelly.

INTERMEDIATE FRAME: At least once every six months, check the intermediate frame fixing bolts for looseness and tighten them yourself if necessary, or contact IGLOOCAR SERVICE.

Before the winter season, it is advisable to carry out maintenance on the intermediate frame once a year, using generally available maintenance products for vehicle chassis. After the winter season, wash the underside of the vehicle body, including the intermediate frame, thoroughly with warm water under pressure. If necessary, repaint and maintain the varnish coating.

CAUTION!!!

1. It is recommended that the interior of buildings used for grocery transport be cleaned and dried before storing for more than 1 week, and then, to ventilate it, leave one of the door panels or ventilation windows open during this time.
- 2 Vans vehicle bodies, insulated vans and special beverage vans are to be cleaned from the outside only. The interior is to be kept clean by sweeping and wiping the sheathing with a damp cloth and detergent. **It is forbidden to pour, rinse, etc. with water on the interior of this type of vehicle body !!!**
3. **DO NOT paint the vehicle body in dark colours.**
4. **DO NOT expose the vehicle body to temperatures above +50°C.**

4.2.3 TOUCH-UP VARNISHING

Varnished parts of vehicle bodies, which are used in difficult road conditions and especially in winter, are exposed to a variety of factors that can cause damage to the varnish surface. The most aggressive agents include chemicals, as well as the sand used to grit the roadways in winter. Damage to the varnish can also be caused by impacts with small stones, scratches and other mechanical damage. Such damage reduces the corrosion resistance and aesthetics of the vehicle body.

If the above-mentioned damage is found, it is recommended that the varnished surface be repaired in order to halt the progress of the corrosion process. The touch ups should be carried out according to the following procedure. Careful adherence to the following guidelines will ensure that the damage is adequately protected and that the bodywork in service looks aesthetic.

The procedure for carrying out the touch ups:

1. Wash and dry the body
2. Sand down damaged areas (chips, cracks, etc.) with abrasive paper no. 400 to a clean surface.
3. Wipe sanded areas with extraction benzine
4. Apply primer (acrylic paint) to the surface
5. After drying, apply a topcoat of the chosen colour. Apply paint with a brush with soft bristles
6. Carry out the above activities while observing general occupational health and safety rules and fire regulations.

5 CONDITIONS FOR MOUNTING ADVERTISEMENTS ON VEHICLE BODY'S WALLS

5.1 PAINTED ADVERTISEMENTS

- it is recommended to degrease the surfaces to be painted with extraction benzine
- paint materials approved for use on exterior sheeting:
 - acrylic varnish,
 - polyurethane varnish,
 - general purpose polyvinyl enamels,
 - general purpose phthalic enamels

5.2 STICKER ADVERTISEMENTS

- it is recommended to degrease the surfaces to be bonded with extraction benzine,
- on vehicle body's surfaces with a topcoat of varnish, advertisements may not be affixed until 14 days after painting at the earliest,

Removing the film

- When removing the advertising film, do not heat the wall above 50°C
- Remove the film carefully so as not to damage the lacquer or laminate.

CAUTION !!!

1. It is **NOT** permitted to cut the film directly on the surface of the sheathing,
2. It is **NOT** permitted to degrease the surface with acetone, nitro solvent, etc.
3. **NO** roughening of the surface with sandpaper is permitted
4. Dark coloured films and paints are **NOT** permitted on a large (over 0,5 m²) area.

5.3 Maintenance of reflective tape and distinguishing signs.

According to the tape manufacturer's recommendations, high-pressure spray washing is permissible under the following conditions:

- Max. pressure 80 bar.
- Max. water temperature 60°C
- Cone-shaped water jet, directed at an angle of not less than 40°.
- The distance of the nozzle from the surface to be cleaned not less than 60 cm

6 EXCERPTS FROM THE ATP AGREEMENT (temperatures required for distribution of goods):

6.1 FROZEN AND DEEP-FROZEN GROCERIES

The temperature at any point in the loading, carriage and unloading of the cargo should not be higher than the following values.

In exceptional situations, a short-term increase in temperature in a part of the cargo surface (e.g. near the evaporator of a cooling unit) is permissible, but no more than 3°C in relation to the temperatures given below:

- Ice cream.....: -20°C
- Frozen and deep-frozen fish, fish products, molluscs and crustaceans, and all other deep-frozen groceries:: -18°C
- All frozen groceries, except butter:: -12°C
- Butter:: -10°C

6.2 GROCERIES WHICH ARE NOT FROZEN AND DEEP-FROZEN

Temperatures should not exceed the following values:

- Crude milk ¹: +6°C
- Red meat ² large game (other than red giblets): +7°C
- Meat products ³ UHT milk, butter, fresh dairy products (yoghurt, kefir, cream, fresh cheese ⁴), ready-to-eat, cooked groceries (meat, fish, vegetables), ready to eat cooked raw vegetables and vegetable products ⁵, concentrated fruit juice and fish products not listed below: +6°C
- Game (other than big game), poultry, rabbits: +4°C
- Red giblets: +3°C
- Minced meat
- Unprocessed fish, molluscs and crustaceans ⁶

1. When milk is collected from the farm for direct processing, the temperature may rise during transport to +10°C
2. In any form.
3. With the exception of products fully processed by salting, smoking, drying or sterilization.
4. "Fresh cheese" means unripened cheese that is ready for consumption within a short period after production and has a limited shelf life.
5. Raw vegetables crushed, sliced or otherwise reduced in size, but excluding those which have only been washed, peeled or halved.
6. Excluding live fish, molluscs and crustaceans.

7 INFORMATION ON WARRANTY CONDITIONS

Detailed warranty terms and conditions are stated in the WARRANTY CARD enclosed with each vehicle body sold. Each vehicle body undergoes a pre-sale 'zero' inspection.

8 REFRIGERATED BODY

According to the ATP Classification of means of transport for the carriage of perishable goods:

- refrigerated body, FNA category - means of transport with normal Class A insulation, having a K-factor of not more than $0,7 \text{ W/m}^2 \text{ } ^\circ\text{C}$, equipped with a refrigerating device permitting, at an average outside temperature of $+30^\circ\text{C}$, the temperature inside the empty loading chamber to be reduced and then constantly maintained between $+12^\circ\text{C}$ and 0°C inclusive,
- refrigerated body, FRC category - means of transport with Class C reinforced insulation having a K-factor of not more than $0,4 \text{ W/m}^2 \text{ } ^\circ\text{C}$, equipped with a refrigerating device permitting, at an average outside temperature of $+30^\circ\text{C}$, the temperature inside the empty loading chamber to be reduced and then constantly maintained between $+12^\circ\text{C}$ and -20°C inclusive,

8.1 INTENDED USE

The refrigerated vehicle body is designed for the transport and distribution of fresh goods at temperatures maintained at $+12^\circ\text{C}$ to 0°C , or frozen at temperatures maintained in the range down to -20°C . Stable temperature inside the cargo chamber, regardless of the season and external conditions, this type of installation can be used for transporting goods such as fresh fruit, vegetables, flowers, confectionery, as well as deep-frozen meat, half-carasses, fish, etc.

CAUTION!!!

The refrigerated vehicle body must not be used as a freezer chamber for fresh articles groceries that require deep-freezing for transport must be cooled beforehand, e.g. in a special freezer chamber or cold store. The specific conditions for the carriage of groceries distribution in domestic and foreign trade are governed by the relevant regulations excerpted from the ATP agreement presented in point. 6 of this instruction)

8.2 DESCRIPTION OF CONSTRUCTION

The refrigerated vehicle body is made as a self-supporting, glued structure with sandwich-type panels. The panels are made of CFC-free polyurethane foam with an outer sheathing of polyester-glass laminate and an inner sheathing of organic-coated galvanized steel sheet, or with an outer and inner sheathing of polyester-glass laminate. The front wall is designed to accommodate a refrigerating unit. The floor is made as a sandwich panel with laminate sheathing on the underside and an outer layer of waterproof plywood, coated with a resin composition with a surface roughening agent (with a smooth surface on request), or can be lined with an Al. alloy sheet with a special anti-slip pattern embossed.

8.3 STANDARD EQUIPMENT

- double-leaf back door with stainless steel frame, door panels sealed with labyrinth seal, opening angle 270° , lockable in open position, closure with vertical turn bolt with cassette handle, stainless steel door fittings, dimensions clear opening of door frame in accordance with internal section of loading chamber,
- pull-out access ladder for rear and side doors,
- interior lighting - embedded ceiling LED lamps
- external equipment - in accordance with the provisions on technical roadworthiness conditions.

Depending on the chassis used, the installation of the vehicle body is carried out as 12 V or 24 V in accordance with the installation of the base vehicle.

8.4 ADDITIONAL EQUIPMENT

- refrigerating unit - the type, specification and technical parameters of the refrigerating unit are adapted to the size and type of vehicle body, as well as to the individual requirements of the user, the specific temperature requirements for the transport and distribution of the individual goods groups must be carefully checked in each case and the operating parameters of the refrigerating unit must be set accordingly. Detailed information is contained in the instruction manual for the refrigerating unit.
- single-leaf side door with stainless steel frame - door panel sealed with labyrinth seal, opening angle 180°, lockable in open position, closure with vertical mortise lock with cassette handle, door fittings in stainless steel, side door may be positioned on the right or left-hand vehicle body's wall, clear opening dimensions of the frame depend on the size of the vehicle body.
- partitions - hard (or soft), fixed and movable-liftable, making it possible to divide the bodywork into several chambers with different temperature conditions, as required
- ventilation windows - in the front wall and back door for additional air exchange in the bodywork when transporting e.g. fresh fruit, bread etc.
- self-loading lift - the type and technical parameters depend on the size of the bodywork and the individual requirements of the user
For details, please refer to the instruction manual of the self-loading lift
- double-deck loading system - used when there is a need to load more than the standard number of EURO pallets, with a properly lowered height. The height of the individual transverse pallet rows on the top and bottom levels can be set individually. In the case there is no need for a second loading level, the horizontal beams are placed at the highest level under the bodywork roof.
- reeded aluminum sheet floor covering - recommended in the event of frequent use for loading, heavy fork-lift trucks, hand pallet trucks and handling heavy pallets inside the bodywork and when transporting goods from which water leaks in large quantities. The aluminum version of the floor is made watertight and can be cleaned with pressurised water.
- loading straps - used for blocking and securing loads with various types of belts and spreader bars, especially when the bodywork is not fully loaded
- hook system for transporting half carcasses - consists of:
 - EURO-2 guides made of galvanized steel pipes,
 - aluminum guide locks with stainless steel insert,
 - aluminum profile to secure the hooks,
 - stainless steel sliding hooks,
 - aluminum-alloy guide-ends,
- strip curtains - in the back and side doors to reduce heat loss when they are frequently opened.
- other - additional equipment installed according to individual needs and on user's request
- operating a sliding partition:
 - **lowering:**
 - unlock the suspension hook,
 - tilt the partition downwards until it unlocks,
 - move the partition to the desired position and lower it vertically, ensuring that the top locks are properly engaged

CAUTION!!!

The partition wall in the vertical position must be supported by the goods at the front of the chamber,

- lower the bottom locks.

- **lifting:**

- lift the bottom locks

- put your hand between the chamber wall and the wall by pressing on the seal and lift the partition wall by its handle until the top locks are unlocked,

- close the bottom locks, move the partition to the desired position, raise to the correct level, ensuring that the top locking mechanism is correctly engaged,

- push the suspension hook against the wall and lock.

8.5 GENERAL RECOMMENDATIONS

8.5.1 Cargo should be transported in individual packages (cartons, boxes, sacks) or transport containers (crates, containers, pallets, etc.).

8.5.2 For hygienic reasons, unpacked groceries should not be stored directly on the floor

8.5.3 The frequency with which the door is opened, as well as the length of time the door is left open in the cooled refrigeration chamber should be kept to a minimum.

8.5.4 The frequent need to open the door and keep it open for long periods of time with the refrigerator chamber cooled requires a significant reduction in the time between starts of the evaporator defrost cycle.

8.5.5 Cold store vehicle body with electrically driven refrigerating unit should not be used for long term storage of goods (max. 12 hrs.), due to the lower cooling capacity of the unit operating in this mode.

8.5.6 In the event of a failure of the refrigerating unit, the goods must be transferred as soon as possible (up to 4 hours) to a chamber with a functioning refrigerating unit. Keep the door closed until the chamber is unloaded.

8.5.7 Special care should be taken when servicing the refrigerating unit from the roof deck or the ladder on the front wall.

8.5.8 When transporting half carcasses on hooks, the following conditions must be met:

- A maximum of 70 kg of cargo can be accommodated per hook,
- Cargo on the hooks must be distributed symmetrically about the longitudinal axis of the vehicle,
- The hooks must be prevented from sliding along the guide by using locks,
- Half - carcasses should be packed in plastic bags for transport

8.5.9 The hooks should slide smoothly on guides, in case of difficulty in sliding due to significant dirt on the hooks and the guides:

- remove all hooks from the guides,
- wash hooks and guides thoroughly in warm water with neutral detergent,
- dry all components carefully with compressed air,
- lubricate the guides with a small amount of RENOLIT G7 grease, (RENOGEL 7, to DIN 51502), or any edible vegetable oil,
- fit the hooks onto the guides

9 ISOTHERMAL VEHICLE BODY

According to the ATP Classification of means of transport for the carriage of perishable goods:

- isotherm category IN - means of transport with **normal Class A insulation** having an K factor of not more than $W/m^2\text{ }^\circ\text{C}$
- isotherm category IR - means of transport with **reinforced Class C insulation** having a K-factor not greater than $W/m^2\text{ }^\circ\text{C}$

9.1 INTENDED USE

Isothermal body is designed for the transport over short and medium distances of goods that are sensitive to excessive increases or decreases in temperature, or that need to be fully protected from the effects of atmospheric conditions (dust, dirt, humidity, etc.). This type of vehicle body is recommended for transporting groceries that do not require refrigeration to below 0°C (e.g. bread, dairy products, fresh meats, fruit, etc.), as well as a variety of industrial goods (electronics, chemicals, medicines, etc.).

9.2 DESCRIPTION OF CONSTRUCTION

The body is made of CFC-free polyurethane foam with an outer sheathing of polyester-glass laminate and an inner sheathing of organic-coated galvanized steel sheet, or with an outer and inner sheathing of polyester-glass laminate. The front wall is designed to accommodate a refrigerating unit. The floor is made as a sandwich panel with laminate sheathing on the underside and an outer layer of waterproof plywood, coated with a resin composition with a surface roughening agent (with a smooth surface on request), or can be lined with an Al. alloy sheet with an embossed special anti-slip pattern.

9.3 STANDARD EQUIPMENT

- double-leaf back door with stainless steel frame, door leaves labyrinth-sealed, 270°C opening angle, lockable in open position, closed with vertical turn bolt with cassette handle, stainless steel door fittings, clear opening dimensions of door frame in accordance with internal loading chamber cross-section.
- pull-out ladder for the back door (and side door),
- interior recessed lighting flush ceiling lights (10 W bulbs),
- external equipment - in accordance with the provisions on technical roadworthiness conditions

Depending on the chassis used, the installation of the vehicle body is carried out as 12 V or 24 V in accordance with the installation of the base vehicle

9.4 ADDITIONAL EQUIPMENT

- single-leaf side door with stainless steel frame - door panel sealed with labyrinth seal, opening angle 180° , lockable in open position, closure with vertical mortise lock with cassette handle, door fittings in stainless steel, side door may be positioned on the right or left-hand vehicle body's wall, clear opening dimensions of the frame depend on the size of the vehicle body.
- ventilation windows - in the front wall or back door for additional air exchange in the bodywork when transporting e.g. fresh fruit, bread etc.
- self-loading lift - the type and technical parameters depend on the size of the bodywork and the individual requirements of the user For details, please refer to the instruction manual of the self-loading lift
- reeded aluminum sheet floor covering - recommended in the event of frequent use for loading, heavy fork-lift trucks, hand pallet trucks and handling heavy pallets inside the bodywork. The aluminum version of the floor is made watertight and suitable for pressure washing
- loading straps - used for blocking and securing loads with various types of belts and spreader bars, especially when the bodywork is not fully loaded
- other - additional equipment installed according to individual needs and on user's request

9.5 GENERAL RECOMMENDATIONS

9.5.1 Cargo should be transported in individual packages (cartons, boxes, sacks) or transport containers (crates, containers, pallets, etc.).

9.5.2 For hygienic reasons, unpacked groceries should not be stored directly on the floor

10 LIGHT INSULATED VEHICLE BODY

10.1 INTENDED USE

Light insulated is a type of body used for transporting various types of goods requiring good protection against external conditions (humidity, dust, etc.) and against rapid heating or cooling of the interior of the loading chamber as a result of sudden changes in ambient temperature. The vehicle body can be used to transport groceries that do not need to maintain a constant temperature during transport. This type of vehicle body makes short-distance transport of demanding groceries (e.g. bread, fruit, etc.), as well as a wide range of industrial goods (electronics, chemicals, medicines, etc.) possible.

CAUTION !!!

The light insulated vehicle body is not designed to accommodate a refrigerating unit.

10.2 DESCRIPTION OF CONSTRUCTION

The light insulated vehicle body is made as a self-supporting, glued structure with sandwich-type panels (roof, walls, doors). The panels are made on the basis of CFC-free polyurethane foam with an outer sheathing of polyester-glass laminate and an inner sheathing of organic-coated galvanized steel sheet or with an outer and inner sheathing of polyester-glass laminate. The uninsulated floor is lined with plywood with an anti-slip layer on both sides.

10.3 STANDARD EQUIPMENT

- double-leaf back door with stainless steel frame, door leaves labyrinth-sealed, 270° opening angle, lockable in open position, closed with vertical turn bolt with cassette handle, stainless steel door fittings, clear opening dimensions of door frame in accordance with internal loading chamber cross-section,
- pull-out ladder for the back door (and side door),
- interior lighting flush ceiling lights (10 W bulbs),
- external equipment - in accordance with the provisions on technical roadworthiness conditions

Depending on the chassis used, the installation of the vehicle body is carried out as 12 V or 24 V in accordance with the installation of the base vehicle.

10.4 ADDITIONAL EQUIPMENT

- single-leaf side door with stainless steel frame - door panel sealed with labyrinth seal, opening angle 180°, lockable in open position, closure with vertical mortise lock with cassette handle, door fittings in stainless steel, side door may be positioned on the right or left-hand vehicle body's wall, clear opening dimensions of the frame depend on the size of the vehicle body
- air vents - in the front wall and in the back doors (or back part of the side wall) for additional bodywork air exchange when transporting goods which require air circulation
- self-loading lift - the type and technical parameters depend on the size of the bodywork and the individual requirements of the user For details, please refer to the instruction manual of the self-loading lift
- hanging garment transport system - consists of:
 - KEYHOLE-type panels (over the entire surface of the side walls) for attaching clothing rails (Al anodised sheet metal, 2.5 mm thick, perforated from a height of 500 mm upwards), or horizontal strips for attaching clothing rails glued to the side walls along the entire length of the bodywork (number of rows and positioning as required),
 - garment rails (number as required)
- reeded aluminum sheet floor covering - recommended in the event of frequent use for loading, heavy fork-lift trucks, hand pallet trucks and handling heavy pallets inside the bodywork. The aluminum version of the floor is made watertight and suitable for pressure washing.
- loading straps - used for blocking and securing loads with various types of belts and spreader bars, especially when the bodywork is not fully loaded
- fixed or folding shelves (as agreed), other - additional equipment installed according to individual needs and on user's request

11 ICE CREAM VEHICLE BODY

According to the ATP Classification of means of transport for the carriage of perishable goods:

- Ice cream category RRC - means of transport **with Class C reinforced insulation** having a K-factor of not more than $0,4 \text{ W/m}^2\text{C}$, equipped with a cold source (eutectic plates) capable of lowering the temperature inside the empty loading chamber at an average outside temperature of $+30^\circ\text{C}$ and then constantly maintaining it at no more than -20°C ,

11.1 INTENDED USE

The ice cream vehicle body is designed for the transport and distribution of deep-frozen goods such as ice cream and frozen food, especially in urban conditions characterized by short distances between unloading points and therefore a high frequency of loading chamber door openings. To reduce heat loss during loading and unloading, and to facilitate the distribution of goods of different assortments, the interior of the loading chamber is divided into compartments, access to which is provided by separate doors.

11.2 DESCRIPTION OF CONSTRUCTION

The ice cream vehicle body is made as a self-supporting, bonded construction of sandwich-type panels with CFC-free polyurethane foam insulation, with an inner and outer sheathing of polyester-glass laminate with gelcoat. The floor is made as a layered panel with laminate sheathing underneath and an outer layer of waterproof plywood, covered with a resin composition with a smooth surface. The loading chamber is equipped with openwork partitions made of Al. profiles, dividing the interior (depending on body size) into 4 to 12 chambers, each with separate doors.

11.3 STANDARD EQUIPMENT

- side doors 4 to 12 pcs depending on the size of the building, door panel pressurised, opening angle 180° , locked in open position, door handle locking, stainless steel door fittings, electric heating of the side door frames - total power of the installed electric heaters is from 188 to 500 W (depending on the number of doors)
- Interior lighting - flush ceiling lights above each door (5 W bulbs),
- external equipment - in accordance with the provisions on technical roadworthiness conditions

Depending on the chassis used, electrical installation is carried out as 12 V or 24 V in accordance with the installation of the base vehicle

CAUTION !!!

To prevent the vehicle battery from being discharged, the door heaters should only be switched on with the vehicle engine running at least 15 minutes before the bodywork doors are expected to be opened.

11.4 ADDITIONAL EQUIPMENT

- refrigerating unit with eutectic panels and refrigeration plant - the type, specification and technical parameters of refrigerating unit and plant are adapted to the size and type of vehicle body, as well as to the individual requirements of the user. The average time to achieve the required temperature of -30°C inside the loading chamber is approximately 12 hours (380 V power supply for the refrigerating unit)
. The refrigerating unit only operates when the vehicle remains at standstill.
- double-leaf back door with stainless steel frame, door leaves labyrinth-sealed, 270° opening angle, lockable in open position, closed with vertical turn bolt with cassette handle, stainless steel door fittings, clear opening dimensions of door frame in accordance with internal loading chamber cross-section,
- Openwork loading carts, 2-storey with adjustable shelf, folding, galvanized steel, slide into loading chamber through back door, stabilized on recessed floor rails, blocked with spreader bar (horizontal),
- floor plates, plastic grid to provide cold air access to the lower cargo level, preventing the cargo from freezing to the floor.

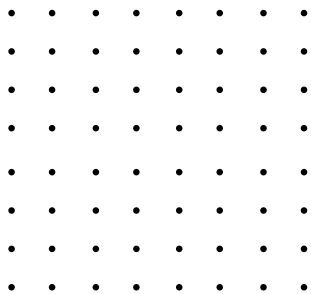
11.5 GENERAL RECOMMENDATIONS

11.5.1 Groceries are to be transported in individual packaging (cartons, boxes, sacks), or in transport containers (crates, containers, etc.),

11.5.2 For hygienic reasons, unpacked groceries should not be stored directly on the floor. The frequency with which the door is opened, as well as the length of time the door is left open in the refrigerated loading chamber, should be kept to a minimum.

11.5.3 To ensure efficient and trouble-free operation, it is recommended to perform thawing and defrosting of the eutectic plates:

- defrosting must be carried out once a month and, if possible, more often, e.g. once a week during week-end breaks in operation,
- defrosting should be carried out by opening the doors and equalizing the temperature inside and outside the bodywork, thawing and defrosting can be considered complete when the eutectic plates are completely dry (free of ice and frost).
- do not accelerate the defrosting process by using hot gas or mechanically using hand tools, such actions may cause permanent damage to the refrigeration unit components and void the warranty services.



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