



ENERGY SAFE TECHNOLOGIES

Sliding Doors (SD)

OPERATION MANUAL

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AFTER HAVING INSTALLED THE DOOR, ALWAYS ADJUST THE LEAF.

1. GENERAL INFORMATION

This manual outlines information pertaining to ProfHolod refrigeration doors: main uses, information about the doors, technical specifications and installation instructions.

All comments and suggestions for improving operations should be sent to: Russian Federation 141000, MO, Shchelkovo, st. Zavodskaya, 2, tel: +7 (495) 240-83-14, e-mail: info@profholod.com.

2. PURPOSE AND USE

Doors manufactured by ProfHolod are intended for the thermal insulation of doorways of medium and low-temperature chambers, refrigerated warehouses and premises requiring a continued high temperature.

3. SPECIFICATIONS

Door type	Width of opening (mm)	Clearance height (mm)	Door leaf thickness (mm)	External material of the door leaf	Internal material of the door leaf	hreshold height (mm)	Temperature range (L or M)	Sliding direction (R - to the right, L - to the left)
SD	XXXX	XXXX	XXX	XXX-XXX	XXX-XXX	X	X	XX

MATERIALS FROM WHICH THE DOOR IS MADE:

Material code	Description
RAL-0,5	Metal sheet, thickness 0.5 mm, with a RAL polymer coating
Zn-0,5	Galvanized metal sheet, thickness 0.5 mm
AISI 304-0,5	304 stainless steel (food grade), thickness 0.5 mm
AISI 430-0,5	403 stainless all-purpose steel, thickness 0.5 mm

TABLE 1 SHOWS THE RANGE OF SIZES FOR SD BY PROFHOLOD.

Table 1. Range of SD door sizes (multiples of 10 mm)

Width of opening	Clearance height	Leaf thickness
800...3000	1800...3000	80; 100; 120; 150

Sliding doors of our lightweight series are fitted with Italian-made hardware by Coldtech. Doors from the heavy duty series can be fitted with either Spanish-made hardware by KIDE or metal hardware manufactured by ProfHolod.



Figure 1.
COLDTECH hardware for the lightweight door series

- 1- Upper left bracket with roller;
- 2- Upper right bracket with roller;
- 3- Lower guiding grip;
- 4- Lower guide stop;
- 5- Lower roller;
- 6- Outer handle for opening;
- 7- Inner handle for opening;
- 8- Sliding door lock, LCS KIDE;
- 9- Plugs
- 10- Block for adjusting the height of the door leaf.



Figure 2.
KIDE hardware for the heavy duty door series

- 1- Upper right roller;
 - 2- Upper left roller;
 - 3- Bottom guiding grip;
 - 4- Lower guide stop;
 - 5- Lower roller;
 - 6- Sliding door lock;
 - 7- Outer lever handle;
 - 8- Outer handle stop;
 - 9- Inner lever handle by ProfHolod;
 - 10- Stop for the inner handle by ProfHolod;
 - 11- Stop for the guide, on the frame by ProfHolod;
- (For doors weighing more than 100 kg, the kit is always included).



Figure 3.
ProfHolod hardware for the heavy duty door series

- 1- Upper right roller;
- 2- Upper left roller;
- 3- Lower guide grip;
- 4- Lower guide stop;
- 5- Lower roller;
- 6- Sliding door lock, LCS KIDE;
- 7- Outer lever handle;
- 8- Outer handle stop;
- 9- Inner lever handle
- 10- Stop for the inner handle-lever;
- 11- Stop for the guide, on the frame, made in ProfHolod. For doors weighing more than 100 kg, the stop is always included in the delivery set.

THE KEYS FOR THE DOOR LOCKS ARE PROVIDED BY THE MANUFACTURER OF THE LOCKS. PROFHOLOD WILL NOT BE HELD RESPONSIBLE FOR THE NUMBER OF UNIQUE KEYS AND LOCKS IN EACH ORDER.

4. TECHNICAL SPECIFICATIONS

The door leaf, including the edges, is made from 0.5 mm thick steel sheet, which protects the door leaf from impact. Rigid polyurethane foam is used as a filler. The foam density is 45-50 kg/m³ and the thermal conductivity is 0.022 W/K·m.

The door leaves are installed with an overlapping door frame. A rubber gasket is used to seal the refrigeration door.

For the low-temperature option, the door frames are supplied with an electric heating wire to prevent the sealing profile from freezing. All elements of the door leaf are made without cold bridges to reduce cold leakage.

Table 2.
Specifications of the heating wire

Specifications of the heating wire	Unit	Measurement
Voltage	V	220
Frequency	Hz	50
Diameter	mm	less than 8
Power output	W/m	30 ~ 40

The door leaf is protected from minor damage by a special self-adhesive polyethylene film, which is removed after installation. It is highly recommended to remove the film no more than three months after the door was manufactured.

5. SLIDING DOOR SET WITH ATTACHABLE DOOR FRAME

The standard door frame is made from 2 mm thick cold rolled steel sheet and painted with powder enamel paint in RAL 9003 or any other colour from the RAL catalogue. Available in stainless steel AISI 304 or AISI 430. The frame is mounted on one side of the opening using the mounting kit (optional) and can be installed in the following:

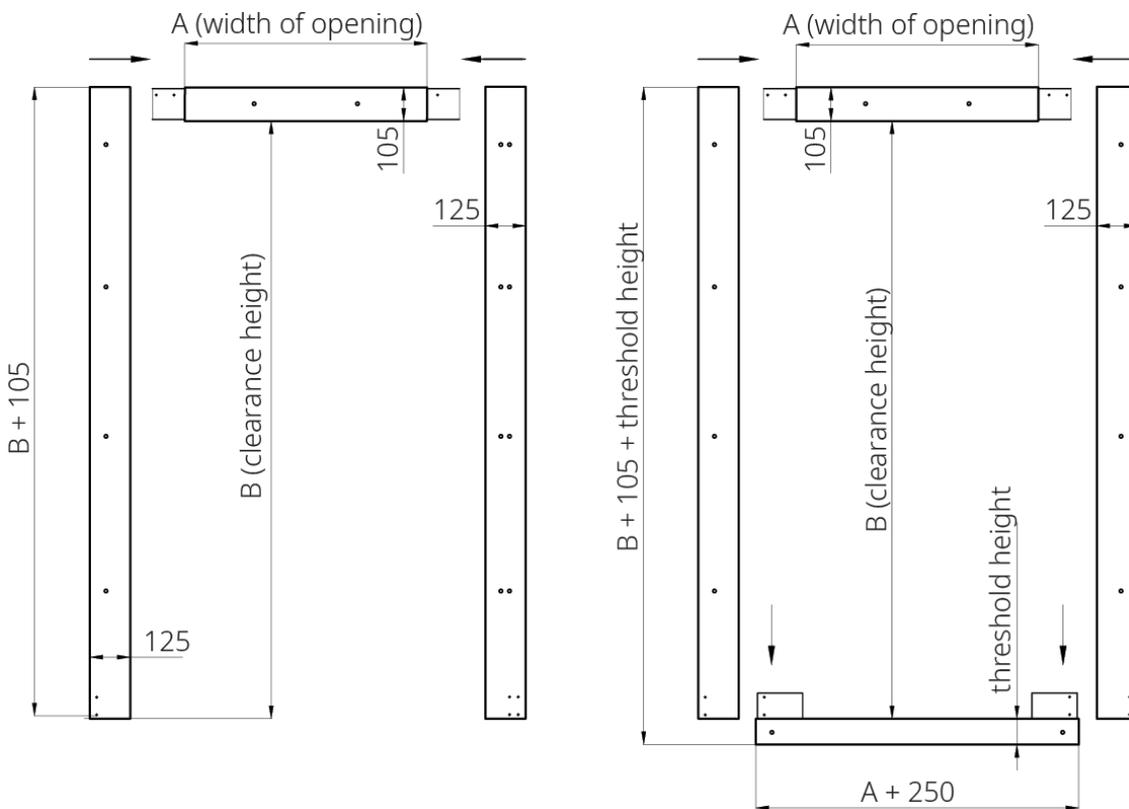
- On a wall opening made of sandwich panels
- On a opening in a load-bearing wall, made of concrete or brick
- On metalwork

The overall dimensions of the metal door frame depend on the dimensions of the opening. For the SD lightweight series they are as follows:

- Frame width = width of the opening + 250 mm.
- Frame height = clearance height + 105 mm + threshold height.

Figure 4.

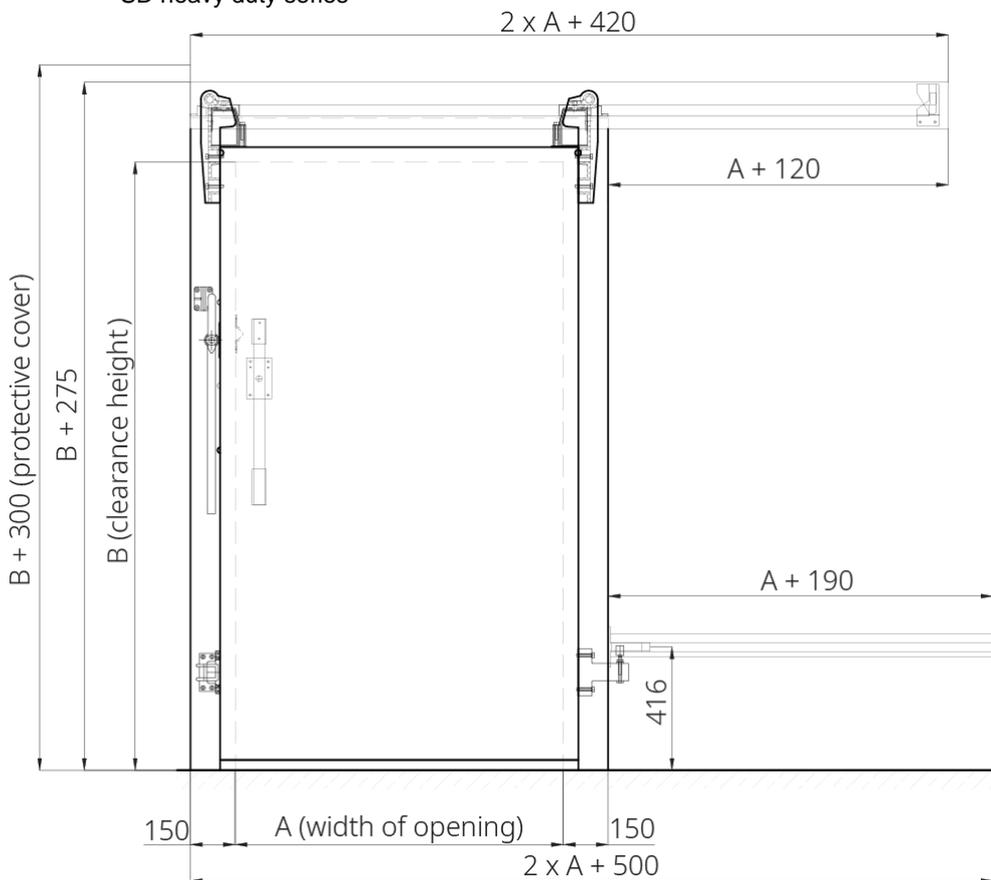
Metal attachable frame for SD lightweight doors. On the left - without a threshold, on the right - with a threshold



The overall dimensions of the metal door frame depend on the dimensions of the opening. For the SD “heavy duty” series they are as follows:

- Frame width = width of the opening + 300 mm
- Frame height = Clearance height + 150 mm + threshold height

Figure 7.
SD heavy duty series



6. ASSEMBLY KITS

The metal frame together with the door leaf is attached to the wall using a mounting kit (optional). SD attachments and fastenings are depicted below:

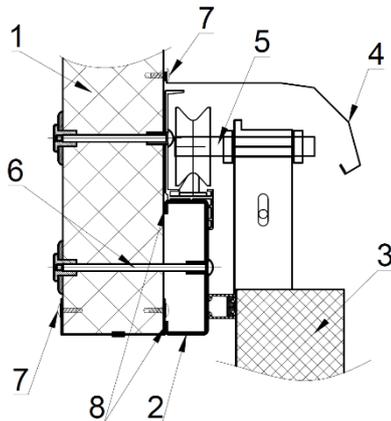


Figure 9.
Fastening the top rail and protective cover to a sandwich panel wall. Cross-section with door.

- 1- Sandwich panel wall;
- 2- Metal door frame;
- 3- Door leaf;
- 4- Guide guard (optional);
- 5- Bracket with roller;
- 6- Mounting kit (optional): Erickson nut; M8 PVC nut; M8 PVC washer; M8 hairpin;
- 7- Self-tapping screws for fittings;
- 8- PPE 3x10 tape for breaking the cold bridge.

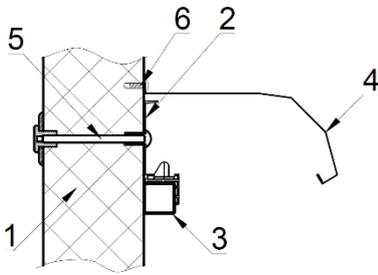


Figure 10.
Attaching the top rail and the protective casing to a sandwich panel wall.

- 1- Sandwich panel wall;
- 2- SD Upper rail;
- 3- The guide, with a protective casing;
- 4- Protective cover
- 5- Mounting kit (optional): Erickson nut; M8 PVC nut; M8 PVC washer; M8 hairpin
- 6- Self-tapping screw for fittings

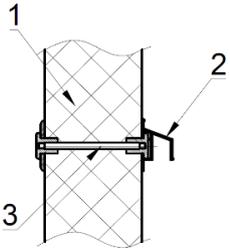


Figure 11.
Fixing the bottom rail to a sandwich panel wall.

- 1- Sandwich panel wall
- 2- Lower guide
- 3- Mounting kit (optional): Erickson nut; M8 PVC nut; M8 PVC washer; M8 hairpin

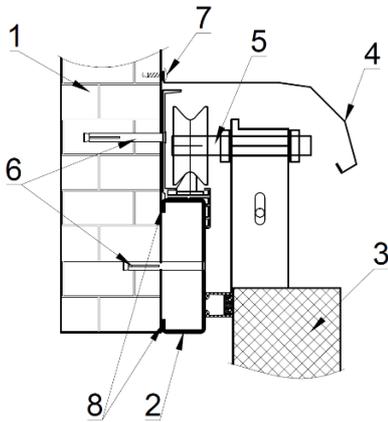


Figure 12.
Attaching the top rail and the protective casing to a brick wall. Cross section with door.

- 1- Brick wall
- 2- Metal door frame
- 3- Door leaf
- 4- Guide guard (optional)
- 5- Bracket with roller
- 6- Mounting kit (optional)
- 7- Self-tapping screw for fittings
- 8- PPE 3x10 tape for breaking the cold bridge

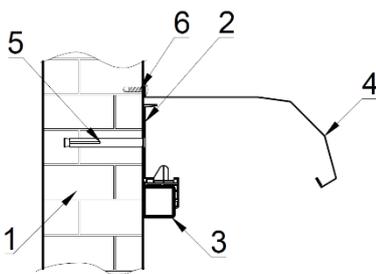


Figure 13.
Attaching the top rail and the protective casing to a brick wall.

- 1- Brick wall
- 2- Upper SD rail
- 3- The guide, with a protective casing
- 4- Protective cover
- 5- Mounting kit (optional)
- 6- Self-tapping screw for fittings

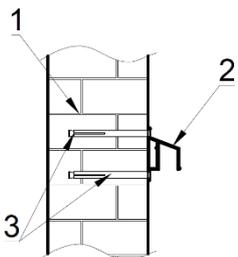


Figure 14.
Attaching the lower rail to a brick wall.

- 1- Brick wall
- 2- Lower guide
- 3- Mounting kit (optional)

7. INSTALLATION OF METAL FRAME AND SLIDING DOORS

The door set can only be installed in a carefully prepared opening. The opening made in sandwich panels must be framed. The opening in brickwork must be prepared for final finishing.

- Before installing the doors, make sure that the leaves were not damaged during transportation. Check all parts are accounted for;
- Check the dimensions of the opening against the dimensions indicated in the door specification. Any deviation of the dimensions of the width and height of the opening cannot exceed ± 5 mm. Any diagonal deviation is accepted at ± 5 mm;
- Assemble the frame components;
- Install the frame in the opening and check both planes: the posts vertically, and the crossbar horizontally. A slight protrusion of the door frame is allowed (2-3 mm);
- Mark the frame mounting holes on the wall;
- Using a drill with a 9 mm drill bit, drill holes into the wall of the sandwich panels where the markings are. It is important to ensure the perpendicularity of the holes to the surface of the sandwich panel wall. If fastening the frame to a brick wall, drill holes with a 10 mm drill bit to a depth of 80-100 mm;
- On the reverse side of the leaf, drill a hole of diameter 19-24 mm using a drill or hole saw;
- At the point where the frame meets the wall, stick the 3x10 PPE tape on the frame to prevent a cold bridge.
- If necessary, on the inner side of the frame, at the position where the door seal is, stick the electric heating wire using aluminum tape;
- Mount the frame into the opening using the assembly kit (for either sandwich panels or brick walls);
- Before the final tightening of the fasteners, check the leveling of the frame vertically and horizontally;
- Attach the top guide to the frame of the doorway, aligning it with the end of the frame;
- Mark the mounting holes for the guide on the frame;
- Using a drill with a 9 mm drill bit, drill holes into the wall of the sandwich panels where the markings are. It is important to ensure the perpendicularity of the holes to the surface of the sandwich panel wall. If fastening the frame to a brick wall, drill holes with a 10 mm drill bit to a depth of 80-100 mm;
- On the reverse side of the leaf, drill a hole of diameter 19-24 mm using a drill or hole saw;
- Attach the rail using an assembly kit (optional);
- Before the final tightening of the fasteners, check the leveling of the rail vertically and horizontally;
- Attach the bottom rail to the wall, aligning the holes in the plastic rail bracket with the pre-drilled holes in the door frame;
- Mark the place where the rail is attached. The bottom rail is then secured with an M8 threaded rod and two sets of M8 plastic nuts and washers;
- Mark the mounting holes for the rail;
- Using a drill with a 9 mm drill bit, drill holes into the wall of the sandwich panels where the markings are. It is important to ensure the perpendicularity of the holes to the surface of the sandwich panel wall. If fastening the frame to a brick wall, drill holes with a 10 mm drill bit to a depth of 80-100 mm;
- On the reverse side of the leaf, drill a hole of diameter 19-24 mm using a drill or "hole saw";
- Attach the lower guide in place and, before finally tightening the nuts, check the leveling for the horizontal plane;
- Hang the door leaf with the rollers onto the upper rail;
- Install the previously removed lower roller, slipping it into the bottom guide;
- While the door is closed, loosen bolts. Now fix the lower gasket, creating a tight (but not pinched) seal between the guide and the floor surface. The width of the compressed gasket should be between 3-5mm;
- After the adjustment, fully re-tighten the bolts;
- While the door leaf is closed over the framework, adjust the nuts so as to ensure there is good tight compression on the perimeter seal between the door leaf and the upper corners of the door framework;
- Having loosened the bolts and pressed the door leaf against the doorway, create an equal and uniform pressure on the gasket along the entire height, and then fully re-tighten the bolts.

8. INSTALLATION AND CONNECTION OF THE ELECTRIC HEATING WIRE

IT IS COMPULSORY TO INSTALL A WIRE ON DOORS INSTALLED IN LOW-TEMPERATURE CHAMBERS IN ORDER TO STOP THE DOOR LEAF STICKING TO THE GASKET.

IT IS RECOMMENDED TO INSTALL A WIRE TO PREVENT THE FORMATION OF CONDENSATION ON THE DOORS OF MEDIUM-TEMPERATURE ROOMS IF:

- The environment inside or outside the doors has regular high humidity (rooms with increased sanitation, basements, mushroom growing chambers, etc.);
- An air conditioning unit is/will be located near the doors;
- The room is not ventilated;
- The doors are installed in a dispatch centre. The wire will need to be connected during periods of high humidity.

The door unit uses two electric heating wires:

1. On the inside of the door frame;
2. At the threshold of the doorway.

The preparation and connecting of the 40 W/m metal braid wire should be carried out in the following sequence:

- Cut the braid wire at the required length (no more than 300 mm);
- Pull the cable out of the sheath and twist it into a bundle;
- Remove the rubber insulation;
- Cut off the visible section of the nichrome thread;
- Insulate the cable with PVC tape or heat shrinking tubing at the end of the rubber insulation;
- Strip the ends of the power supply wires;
- Mount the electrical connection box to the wall for the heating element. The power supply point should be mounted near the lower corner of the frame, on the same side as the handle;
- On the reverse side of the frame, at the point where the seal sits, fix the electric heating wire with adhesive foil tape. The wire should be installed in such a way that the non-heating part, the cold section, is outside the contour of the frame. If the heating part (warm section) is longer than the required circuit, the soldered end of the wire can be wrapped up.

The wires should not touch!

Figure 15.
Preparation of a wire segment for connection



Figure 16.

Layout of the wire in the door frame. On the left - installation in a frame without a threshold; on the right – with a threshold

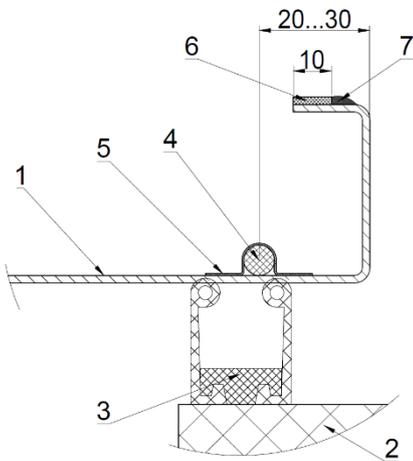
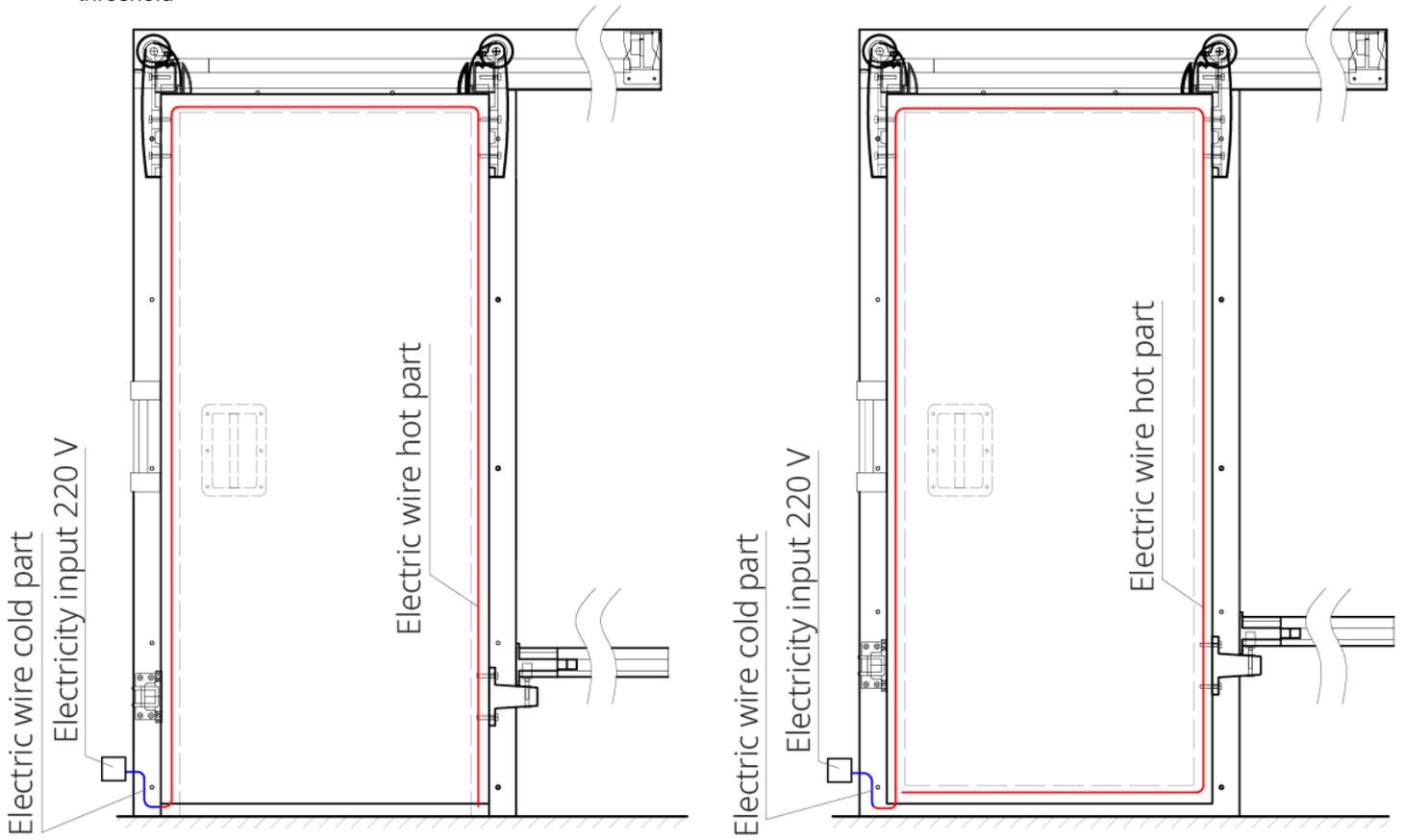


Figure 17.
Wire attachment to the frame

- 1 - Door frame
- 2 - Door leaf
- 3 - Rubber seal, Fermod 8511
- 4 - Wire, metal braid, of constant power 40 W/m
- 5 - Adhesive foil tape
- 6 - PEE 3x10 tape to break the cold bridge
- 7 - Silicone sealant

- The connection is made using a connector block with an AE or VA circuit breaker, with a fuse up to 6 A. Protect the connection point from moisture and dust.

ATTENTION!

THE HEATING ELEMENT MUST BE WIRED BY A PROFESSIONAL ELECTRICIAN.

9. DOOR BLOCK ADJUSTMENT

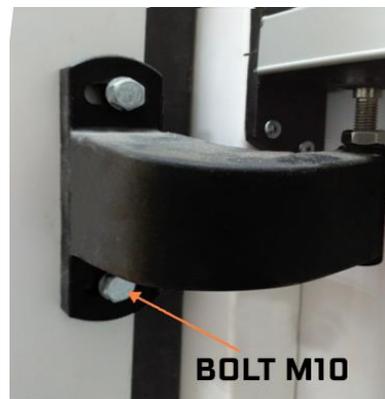
- To correctly adjust the compression of the seal in the upper part of the door leaf each roller should be adjusted separately. This should be done in the following order:

1. Loosen the roller axle nuts;
2. By tightening or loosening the roller axle nuts in one direction or another, it is possible to achieve the necessary compression of the seal in the upper part of the door leaf;
3. Re-tighten the roller axle nuts.



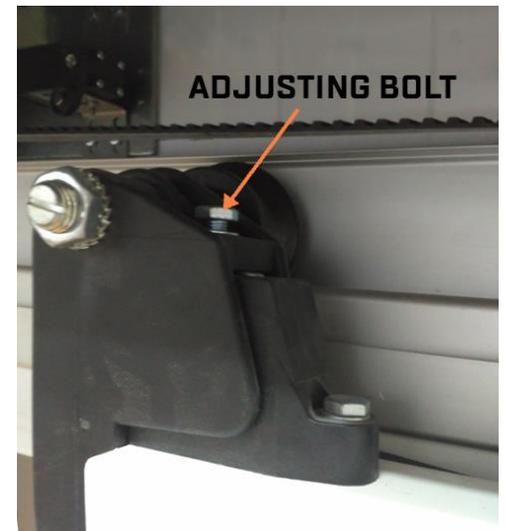
- To correctly adjust the compression of the seal in the lower part of the door leaf, both sides of the door leaf should be adjusted in the following order:

1. Loosen the bolts securing the lower roller and front stop;
2. By moving the lower roller, the front stop in one direction or the other, it is possible to achieve the necessary compression of the seal in the lower part of the door leaf;
3. Re-tighten the bolts for the lower roller and front stop.



- To correctly adjust the compression of the lower seal for non-threshold doors, both sides of the door leaf should be adjusted in the following order:

1. Loosen the 3 upper roller mounting bolts;
2. By turning the adjustment bolt in one direction or another, it is possible to achieve the necessary compression of lower the seal to the floor;
3. Re-tighten the mounting bolts.



10. OPERATION AND MAINTENANCE INSTRUCTIONS

The effective operation and service life of hinged doors is largely dependent on the quality and regularity of maintenance. For a trouble-free and long-term operation of the fittings, it is recommended to schedule an inspection of the fittings, to tighten the fasteners and lubricate the surfaces that experience friction at least once every two weeks. The frequency of maintenance may vary depending on the frequency of the door opening-closing cycles. All sliding parts (upper and lower rails) should be thoroughly cleaned from dirt once a month.

Treat the door seal with silicone grease. Continued use of damaged sliding doors leads to the rapid deterioration of the rail and moving parts. Careful operation and timely replacement of damaged elements will guarantee a long-term and trouble-free life cycle. It is **compulsory** to install a canopy to protect from the sun, snow and rain if the door is installed outside. Storage, installation and operation of doors under the influence of direct sunlight on the door leaf is strongly not recommended.

11. POSSIBLE ISSUES AND THEIR SOLUTIONS

Possible malfunction	Likely cause	Recommended course of action
Noise when in use (squeaks etc.)	Lack of lubrication	Lubricate the support bearings of the hinges, the hinges themselves and/or the door locks.
The need to apply increasing force when opening or closing the doors	The presence of foreign objects in the guides or rails (dust, sand, debris)	Clean thoroughly from dirt. Check the guides and rails for damage.
Failure of locks, handles or latches	Damage during use	Replace damaged items

12. SAFETY MEASURES

Before starting work, it is important to inspect the general condition of the doors.

Do not use the doors if there are any issues or malfunction of parts.

Carry out regular maintenance and inspections, including regular inspections of the power supply to the door block.

13. STORAGE AND TRANSPORTATION

The transportation of doors must be in their original factory packaging, to ensure the protection of the doors from any damage. During transportation the door sets must be securely fastened in a stable position, there can not be any shifting or movement. The doors can be transported by any means of transport, provided they can be securely fastened. Shock or impact to the surfaces of the door leaves during loading and unloading is not allowed. The door blocks should not be exposed to direct sunlight. Storage and operation of doors in direct sunlight is also prohibited. Doors should be stored in spaces protected from precipitation and in a position that does not add any load stress onto the fittings. No more than six doors, with foam pads, are allowed to be stored horizontally.

Packaged products can get more heavy over time: they can absorb moisture, condensation, etc.

14. DISPOSAL

At the end of its service life, the disposal of heat-insulating material or polyurethane foam by incineration is **STRICTLY FORBIDDEN**.

15. DELIVERY SET

1. Metal door frame;
2. SD door leaf, of the correct size for the opening;
3. Guides and rails;
4. Support frame for guide rail. For doors weighing more than 100 kg, this will be installed in the factory.

The standard delivery set of the door includes:

1. Door leaf made of galvanized metal with a RAL polymer coating of at least 0.5 mm, according to the size of the opening (see Table 1);
2. Metal frame made of 2mm thick cold-rolled sheet steel, painted with RAL powder enamel paint;
3. Guides.

Options:

1. Door leaf can be made from AISI 304 or AISI 430 stainless steel;
2. Metal frame can be made from 2 mm thick stainless steel AISI 304 or AISI 430;
3. Wire to heat the seal on the metal frame;
4. A set of fixing elements, so you can install the frame to a sandwich panel, metal structure or brick wall;
5. Cover caps;
6. Guide cover;
7. KIDE (Spain), Rahrbach (Germany) or ProfHolod locks;

16. WARRANTY

ProfHolod LLC guarantees that the door set will meet the design specifications and operational functionality outlined in the documentation, provided that the consumer observes the recommended rules for transportation, storage, installation and operation.

The warranty period for the door set is 1 year from the date of shipment.

During the warranty period, claims will not be accepted if:

- Instructions for installing or adjusting the door block are violated;
- Parts or assembly units are damaged as a result of errors during installation and operation.

The warranty does not cover:

- the gaskets;
- parts that wear quickly.

The manufacturer reserves the right to make minor design changes to the product that are not reflected in this document.

Detailed instructions for loading and unloading, transportation, storage, installation and operation, as well as technical documentation for products manufactured by ProfHolod LLC are available on our website www.profhod.com.

Certificate of receipt

Door kit, model _____
corresponds to the documentation and is recognized as serviceable.

The door kit serial number is located at the end of the door leaf in the right corner.

Production date:

« _____ » _____ 20 _____

Head of quality control department

Stamp

Date of installation

« _____ » _____ 20 _____

