



PST, PSTL, PSTM, ELCHEM

Self-regulating defrosting cables

Guide for selection and installation

Self-regulating defrosting cables

Product selection guide

	Internal installation for domestic water pipes HYGIENIC APPROVAL (FOOD-GRADE)	Safe for underground installation PROTECTED BY REINFORCEMENT BRAIDING	Suitable for rainwater system installations UV PROTECTED OUTER SHEATH
PST 10	✓	✓	
PST 20		✓	✓
PST 30		✓	✓
PST 40		✓	✓
PSTL 10			✓
PSTL 15		✓	✓
PSTM 18 IceFree			✓
PSTM 25			✓
ELCHEM RÄNNI			✓
ELCHEM PRO LSZH		✓	✓

The self-regulating cable is the most popular type for frost protection systems, as its heating output adjusts based on the ambient temperature.

All our self-regulating defrosting cables are suitable for external pipe installation for trace heating. However, our extensive cable range also meets the specific requirements of many other applications, which you can check in the above table.

Our experts will gladly help you find the right product for your application!

When designing a solution, many factors must be taken into account, such as the object's power requirement based on heat loss. Contact our customer service and you will get expert help with product selection.

Self-regulating defrosting cables

General installation instructions

- **The installation must be carried out in accordance with applicable regulations, taking into account the warranty conditions specified in these installation instructions.**
- **The heating cable must not cross an expansion joint.**
- **If the frost protection cable is installed inside a pipe, it must always be ensured that the water does not contain impurities that could react with the cable's outer sheath.**
 - When passing the cable into a pipeline, a compatible pressure bushing pipe fitting must be used to ensure the best tightness.
 - The connection between the heating cable and the power supply cable must always be left outside the pipe. The end of the heating cable can remain inside the pipe.
- **In with electrical safety regulations, the heating cable must not be covered with combustible or easily flammable material.**
 - We recommend using aluminum tape or heat-resistant tape for fastening the cable.
- **The installation is to include a residual current protection switch and the installation must be marked with a weatherproof sign or marking label.**
- **The qualified electrician who performed the electrical connection must fill out and sign the warranty certificate and marking label.**
 - The marking label is attached to the distribution board or next to it.
 - The warranty certificate is handed over to the customer to keep in case of a possible complaint.
 - The validity of the warranty requires that the warranty certificate and label have been filled out carefully.



It is always recommended to use a thermostat or other external control for self-regulating heating cables. This ensures a more energy-efficient operation, while safeguarding a long service life for the cable.

INSTALLATION IN RAINWATER SYSTEMS

1. Check that the resistance is within the tolerance range (Ω), as well as the insulation resistance ($M\Omega$) to ground.
2. Calculate and measure the appropriate cable lengths for the installation site; the cable may be installed in loops, provided it does not touch itself or other heating cables.
3. Make end terminations and cable connections in accordance with the installation instructions included in each package.
4. When installed in eaves, gutters, and downpipes the cable needs to be kept securely in place. Our range of mounting accessories includes KLIPSI and ÄSSÄ magnetic mounts, plastic straps, along with strain-relief wires, hooks, and strips.
5. When installing in downpipes, a strain-relief hook or strain-relief strip must be used.
6. Check that the resistance is within the tolerance range (Ω), as well as the insulation resistance ($M\Omega$) to ground.
7. Connect the frost protection system to its thermostat or control unit in accordance with the installation instructions for the selected controller.



With the strain relief hook, the cable is "hung" over the edge of the chute into the downpipe.



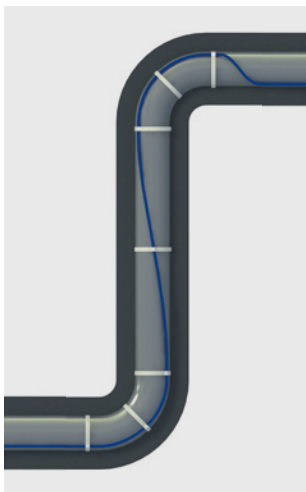
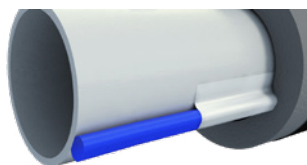
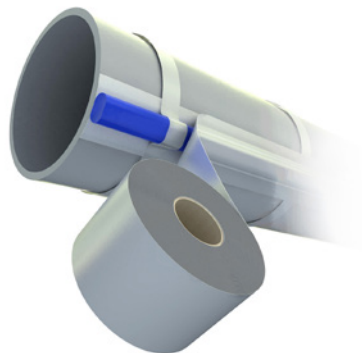
Strain relief strips are folded along the edge of downpipes. The cable is fastened with cable ties.



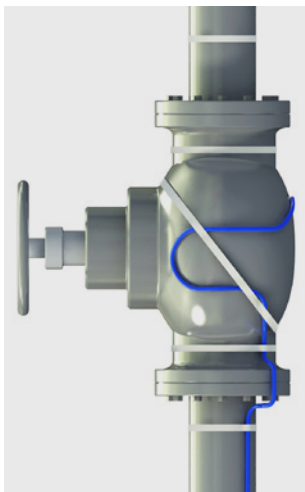
A strain relief wire helps separate cables that are installed side-by-side, e.g. when using cable loops in downpipes.

EXTERNAL PIPE INSTALLATION

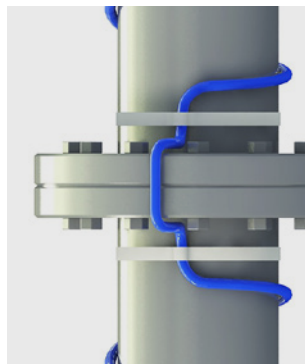
1. Check that the resistance is within the tolerance range (Ω), as well as the insulation resistance ($M\Omega$) to ground.
2. Make the termination and the connection of the supply cable according to the installation instructions of each package.
3. When installing cables outside the pipe, first attach the cable to the side of the pipe by fastening tape strips around the pipe at approx. 20 cm intervals.
4. After this, a longitudinal tape is pulled over the cable. In terms of energy efficiency, the best result is achieved if the pipe is also insulated.
5. Check that the resistance is within the tolerance range (Ω), as well as the insulation resistance ($M\Omega$) to ground.
6. Connect the heat tracing system to its thermostat or control unit in accordance with the installation instructions for the selected controller.



Install the cable along the outer edge of bends. Use heat-resistant tape for fastening.



Add a loop when passing valves, so that the valve can be replaced without cutting the cable.

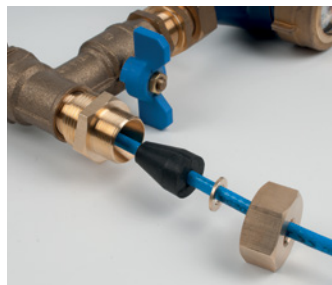
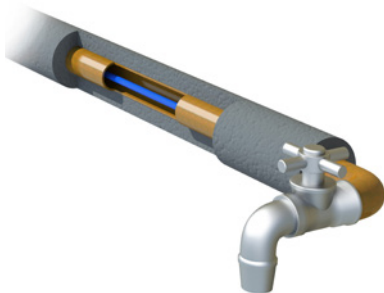


At flanges, the cable must be attached securely to the surface of the structure without creating tensile stress.

Routing the cable loop along the edge of the flange further helps maintain the temperature.

INTERNAL PIPE INSTALLATION

1. Check that the resistance is within the tolerance range (Ω), as well as the insulation resistance ($M\Omega$) to ground.
2. Make the termination and the connection of the supply cable according to the installation instructions of each package.
3. Use a pressure bushing pipe fitting for in-pipe installation. Our pipe fittings have their own, separate installation instructions. In sewer pipes, the cable entry can alternatively be sealed with a heat-resistant sealing compound.
4. Feed the cable into the pipe following the flow direction. Please note that the cable connection between the heating cable and the power supply cable must always remain outside the pipe (> 50 mm distance from the pipe fitting). The end termination can be inside the pipe, as long as the maximum pressure resistance is taken into account.
5. In terms of energy efficiency, the best result is achieved if the pipe is insulated.
6. Check that the resistance is within the tolerance range (Ω), as well as the insulation resistance ($M\Omega$) to ground.
7. Connect the heat tracing system to its thermostat or control unit in accordance with the installation instructions for the selected controller.



**All product information, installation instructions,
and data sheets in one place – on our website**

www.pistesarjat.fi

Self-regulating defrosting cables

Product range and installation accessories

Product number	Product name	Type
04 350 12	PST 10 W/m @ 10 °C	Self-regulating defrosting cable
04 350 17	PST 20 W/m @ 10 °C	Self-regulating defrosting cable
04 350 20	PST 30 W/m @ 10 °C	Self-regulating defrosting cable
04 350 21	PST 40 W/m @ 10 °C	Self-regulating defrosting cable
04 350 22	PSTL 10 W/m @ 10 °C	Self-regulating defrosting cable
04 350 23	PSTL 15 W/m @ 10 °C	Self-regulating defrosting cable
04 350 25	PSTM 18 IceFree	Self-regulating defrosting cable
04 350 28	PSTM 25 W/m @ 10 °C	Self-regulating defrosting cable
81 794 95	ELCHEM RÄNNI 18/36	Self-regulating defrosting cable
04 350 26	ELCHEM PRO 18/36 LSZH	Self-regulating defrosting cable

Product number	Accessory name	Compatibility
81 789 13	Termination kit	All self-regulating cables
81 789 03	Cold-to-hot connection kit	All self-regulating cables
81 789 02	Hot-to-hot connection kit	All self-regulating cables
81 789 32	Termination kit EL-ECN	ELCHEM RÄNNI, PSTM 18 Icefree, PST 20, PST 30, PST 40
04 350 91	Pressure-tight feed-through nipple 1" / ¾"	LIME, PST 10, PSTL 10
04 350 90	Pressure-tight feed-through nipple 1" / ¾"	ELCHEM RÄNNI, PST20, PST30, PST40
81 090 26	Heat-resistant tape 33 m/12 mm	Installation tape, max. +260 °C
60 210 00	Aluminum tape 50 m/50 mm	Installation tape, max. +150 °C
04 350 54	Warning label (ENG), 120 x 75 mm	Heat-tracing and defrosting applications
13 200 01	Magnetic mount KLIPSI®	Rainwater systems, self-regulating cables
13 200 02	Magnetic mount ÄSSÄ®	Rainwater systems, self-regulating cables
81 752 94	Strain relief hook (stainless steel)	Rainwater systems, self-regulating cables
81 752 93	Strain relief strip (stainless steel)	Rainwater systems, self-regulating cables
81 752 95	Strain relief cable 20 m (stainless steel)	Rainwater systems, self-regulating cables
81 752 96	Strain relief cable 10 m (stainless steel)	Rainwater systems, self-regulating cables
81 752 83, 81 752 97–81 752 99	Mounting accessories for copper roofs	Rainwater systems, self-regulating cables

Defrosting range

Series resistance cables

SILEDUO



UV protected cable for keeping outdoor areas free of ice and snow.

Also suitable for frost protection and trace heating in pipelines and drains.

SILE TUFFTEC



Halogen-free and UV protected series resistance cable designed for outdoor use.

High heat resistance and excellent mechanical durability; suitable for use in demanding conditions.

PST 30



UV protected cable for keeping outdoor areas free of ice and snow. Also suitable for frost protection and trace heating in pipelines and drains.

Delivered installation-ready in standard lengths.

SILEKA 200/ 400



Easy-to-install cable mat for keeping outdoor areas, ramps, and walkways free of ice and snow. Available in standard sizes for 200 V or 400 V.

Also available as specified to site dimensions.

SILE TUFFTEC



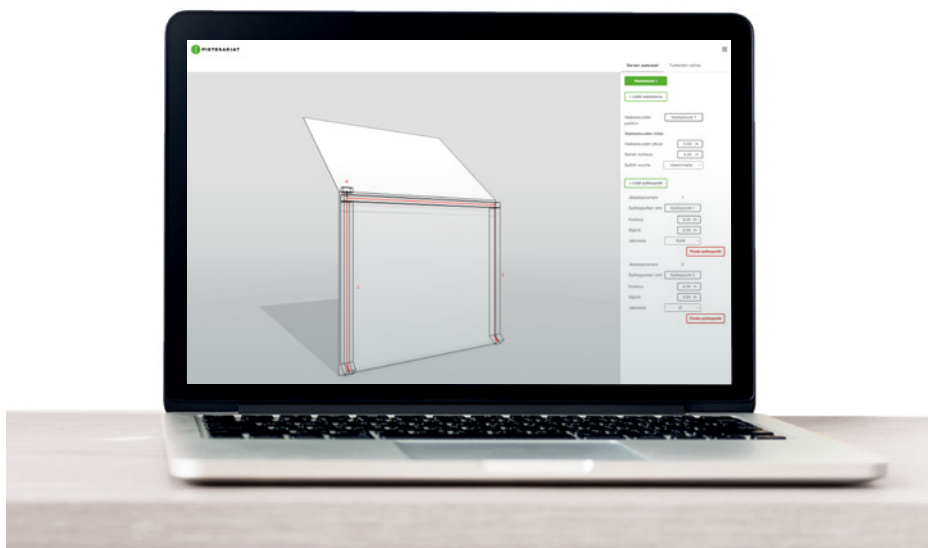
Easy-to-install heating mat for keeping outdoor areas, ramps, and walkways free of ice and snow. Suitable for installation in asphalt.

Also available as specified to site dimensions.

Design, compare and order with our cable configurator

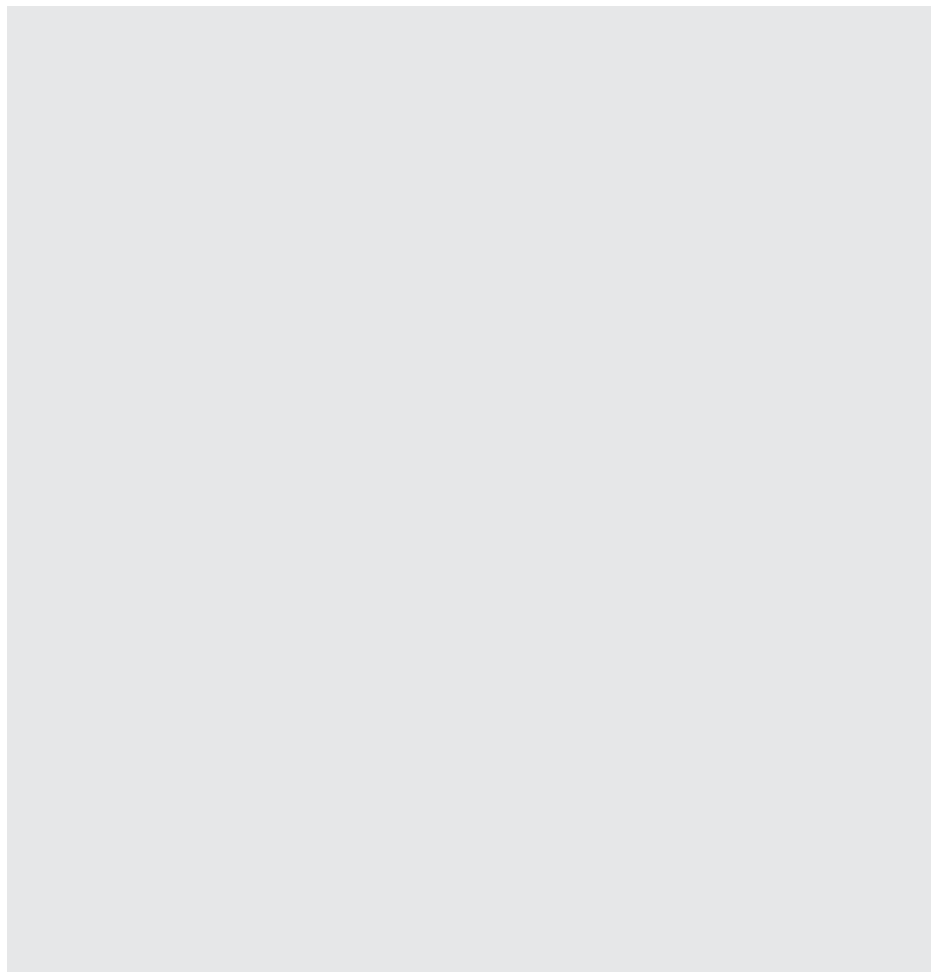
Get our ready-to-install cables
as self service online
by using our new ordering tool!

- ✓ The guided process and automatic selections reduce the risk of errors
- ✓ The versatile tool aids in the design process
- ✓ Compare different solutions with product alternatives and compatible products
- ✓ Save time by ordering assemblies without needing to make a separate inquiry



Installation

Attach here a drawing or an image of the installation



Warranty certificate

Please note:

All fields need to be carefully filled out for the warranty to be valid

WARRANTY SUBJECT (PRODUCT)

INSTALLATION ADDRESS AND INSTALLATION LOCATION

PLACE OF PURCHASE

CABLE LENGTH AND DATE OF MANUFACTURE (MARKED ON THE CABLE)

INSULATION CHECKED; RECORD RESISTANCE VALUE

ELECTRICIAN'S NAME

INSTALLING COMPANY: BUSINESS ID OR REGISTRATION NUMBER

CONTACT DETAILS OF THE ELECTRICIAN OR ELECTRICAL INSTALLATION COMPANY

ELECTRICIAN'S SIGNATURE AND DATE

Pistesarjat Warranty

Conditions and specifications

Pistesarjat Oy (the manufacturer) provides a full two-year warranty on all its products. The warranty covers **material and manufacturing defects** and takes effect from the date of purchase, subject to the following conditions:

- The electrical connection has been performed by a qualified electrician in accordance with applicable regulations and the installation instructions provided by the manufacturer.
- If the technical documentation includes a warranty certificate page, it must be carefully completed at the time of installation.
- The place of purchase has been notified of the fault.
- The manufacturer has been given the opportunity to troubleshoot the issue in order to confirm the cause of the fault.
- No troubleshooting or repair work is carried out without the manufacturer's consent.
- Proof of purchase must be available for presentation.

This installation guide has been checked as carefully as possible. However, we are not responsible for any direct or indirect damages caused by possible errors or incorrect application of information. The rights to changes are reserved. Copyright (C) 2026 Pistesarjat Oy.



Disposal

Electronic components or devices containing them may NOT be disposed of with household waste. They should be disposed of like other electrical and electronic waste, in compliance with local legislation.