

[www.enerpia.com](http://www.enerpia.com)

# ENERPIA

## SYSTEM FOR FREEZE PROTECTION

SMART HEATING SYSTEM

*Smart heating  
specialist*

ENERPIA strives to create  
a warm and safe world.



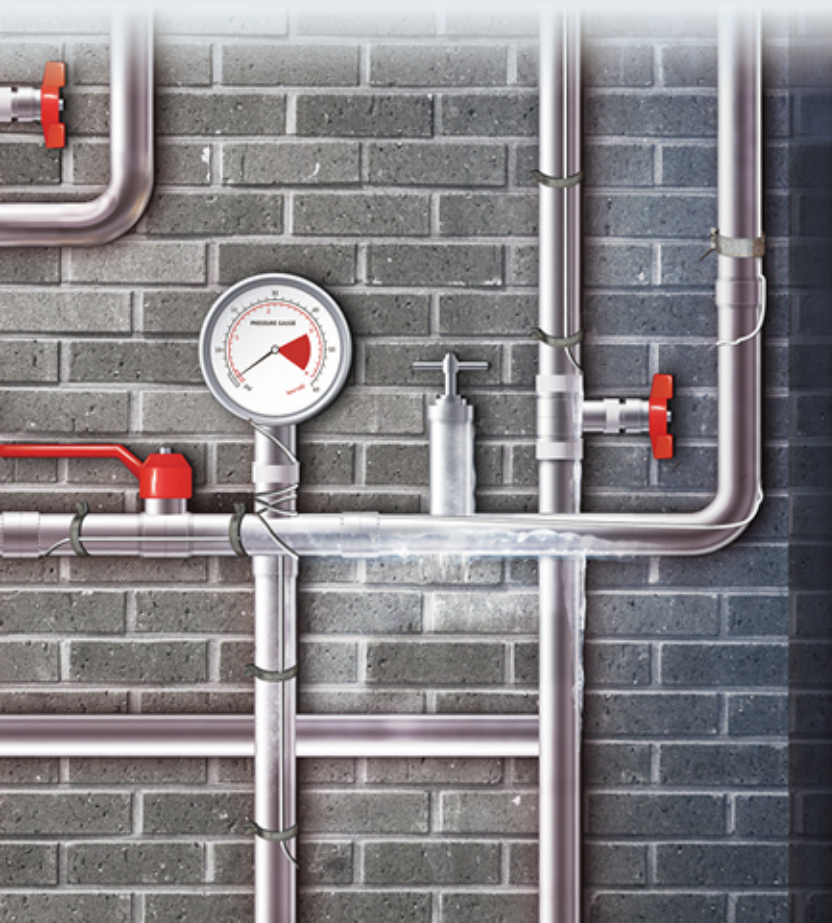
**ENERPIA**  
Smart heating specialist



# Eco-friendly advanced heating system Enerpia Fixed temperature cables for freeze / burst from freezing protection

Freeze protection system that supplements the heat source along the building's conventional pipes in winter to prevent freezing and burst from freezing as well as to keep the fluid temperature constant.

**Fixed temperature wire (non-electromagnetic heating cable)**, which can generate a certain amount of heat, can be installed as a main product employed to **prevent freezing and burst from freezing, and to maintain a smooth supply of water within the facility.**



Self-controlled fixed  
temperature wire!  
**Safe and sound from  
the winter cold!**

Quality and safety come first .

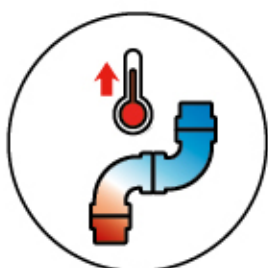
Made with high-temperature resistant and flexible materials, installation is easy and safe even in demanding installation environments.



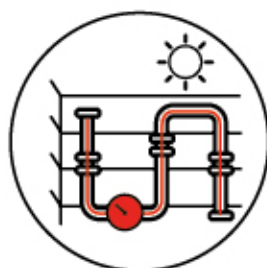


# Why?

## Why choose Enerpia fixed temperature wire for freeze / burst from freezing protection?



The internal resistance changes according to the temperature change, allowing automatic adjustment of the amount of heat generated.



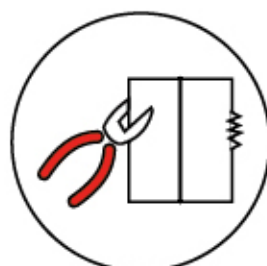
Easy installation can **save costs**



Self-regulated heater provides a great power saving effect and with a semi-permanent life span, it can be used safely **without the need for separate maintenance.**



Can be cut and used without wasting wires



Because it is **an infinite parallel circuit**, it is possible to cut, connect and install according to the use in the field without wasting wires.



**Safer from localized overheating or burnout**



**Blocks electromagnetic waves** for safety

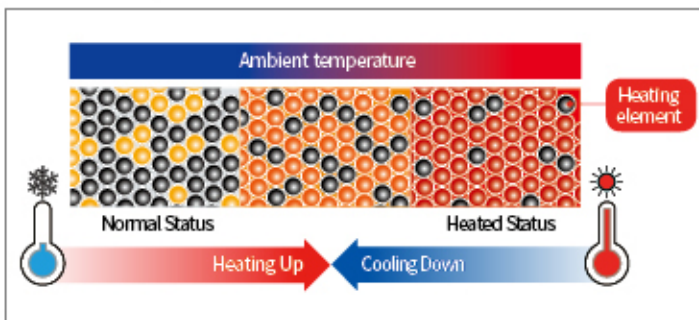


Heating system that **does not generate smoke, gas or burst from freezing**

# Put your mind at ease with Roof Snow Melting Heat Wire!

This product has a self-regulating function that controls the amount of heat generated by changing the current flow according to the ambient temperature. It is a safe roof snow melting heat wire that does not cause fire due to overheating or heat storage.

## Heating principle of fixed temperature wire



Self-regulating function that properly adjusts the amount of heat generated with the addition of PTC characteristics

With the addition of PTC characteristics, the external environment such as temperature rise, increase in electric resistance, decrease in current amount, and drop in temperature, are sensed by the particles of the heating element itself to control the current and control the amount of heat generated. This allows tight control over the power consumption and prevents overheating.

Fixed temperature wire cable that adjusts the amount of heat generated according to the ambient temperature!



**Increase heat generation**  
(in the case of drop in ambient temperature)  
- Increased Current Path increases molecular activity, resulting in increase in the amount of heat generated



**Decrease heat generation**  
(in the case of rise in ambient temperature)  
- Decreased Current Path decreases molecular activity, resulting in decrease in the amount of heat generated

## Enerpia fixed temperature wire melts snow on your roof

You are well protected from freezing pipes in the winter cold, so there is no need to worry about electromagnetic waves !





# Freeze / burst from freezing protection

## Fixed temperature wire specifications by application

The best product to protect home plumbing and industrial facilities from the freezing winter!

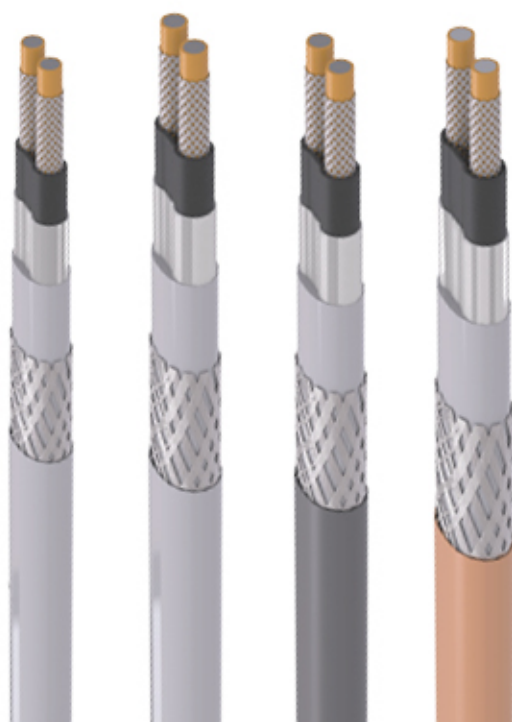
**Fixed temperature wire for freeze protection** that can be reliably used for a long period of time with excellent safety and one-off installation.

### Fixed temperature wire specifications by application

Item	Model no.	Length	Power	Max. allowed temperature	Temperature for continuous usage	Conductor	Size
Prevent freezing/ burst due to freezing	SRL 16-2CR	100M/roll	16	85°C	65°C	18AWG	11.0mm(W) x 6.5mm(H)
Floor heating	FSR 40-2CR	100M/roll	40	100°C	85°C	16AWG	12.8mm(W) x 6.8mm(H)
Roof snow melting	GR 40-2CR	100M/roll	40	85°C	65°C	18AWG	13.0mm(W) x 6.8mm(H)
Snow melting	FM 60-2CR	100M/roll	60	100°C	85°C	14AWG	19.2mm(W) x 9.1mm(H)

\*Standard heat quantity: 10W/m, 16W/m, 24W/m, 30W/m

\*Including bobbin, excluding box



SYSTEM FOR  
FREEZE  
PROTECTION

# No problem in any environment! *Smart heating specialist*

## Can be installed anywhere you want

The fixed temperature wire for prevention of freezing/burst due to freezing is a cable whose output (heat output, power output) changes according to the temperature of a pipe or container. It has an infinite parallel structure, so the amount of heat generated per unit meter is constant regardless of the length, and the internal resistance is adjusted according to the change in the ambient temperature. This allows it to automatically increase or decrease the amount of heat generated through self-regulation.

### Structure of fixed temperature wire for prevention of freezing/burst due to freezing (SRL 16-2CR)



**1 Conductor**  
Supplies power  
Tin-plated copper wire, asbestos wire, TA

**2 Heating element**  
Semiconductor heating element with PTC characteristics formulated with a semiconductive polymer material that forms an infinite parallel circuit

**3 Internal insulator**  
Helps prevent the reduction of heat generated, underwent a high-temperature heat treatment process

**4 Braiding**  
Protects the cable from external shocks, improves traction and shields electromagnetic waves.

**5 Primary insulation sheath**  
Provides mitigation against external thermal and physical shock Polyester (Bare Type)

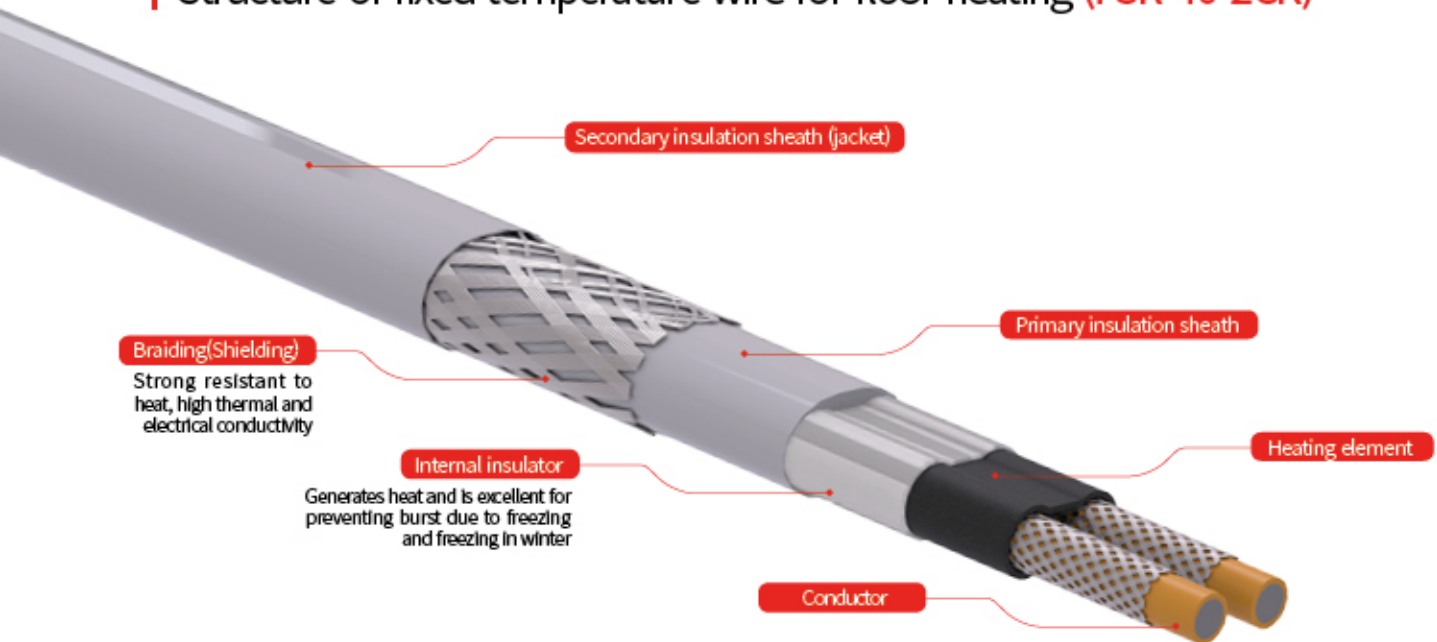
**6 Secondary insulation sheath (jacket)**  
Provides protection against external physical shock Polyolefin (CR Type), Fluorine resin (Teflon, CT Type)

# No problem in any environment! *Smart heating specialist*

## Can be installed anywhere you want

The fixed temperature wire for floor heating is economical because the use of space is consistent compared to ordinary heating cables, and safe because it does not generate electromagnetic waves. Also, there is greater freedom in choosing the finishing materials, hence, it is used mainly for floor heating purposes at locations such as hotel lobbies and indoor floor heating.

### | Structure of fixed temperature wire for floor heating (FSR 40-2CR)



**1 Conductor**  
Supplies power  
Tin-plated copper wire, asbestos wire, TA

**2 Heating element**  
Semiconductor heating element with PTC characteristics formulated with a semiconductive polymer material that forms an infinite parallel circuit

**3 Internal insulator**  
Helps prevent the reduction of heat generated, underwent a high-temperature heat treatment process

**4 Braiding**  
Protects the cable from external shocks, improves traction and shields electromagnetic waves.

**5 Primary insulation sheath**  
Provides mitigation against external thermal and physical shock Polyester (Bare Type)

**6 Secondary insulation sheath (jacket)**  
Provides protection against external physical shock Polyolefin (CR Type), Fluorine resin (Teflon,CT Type)



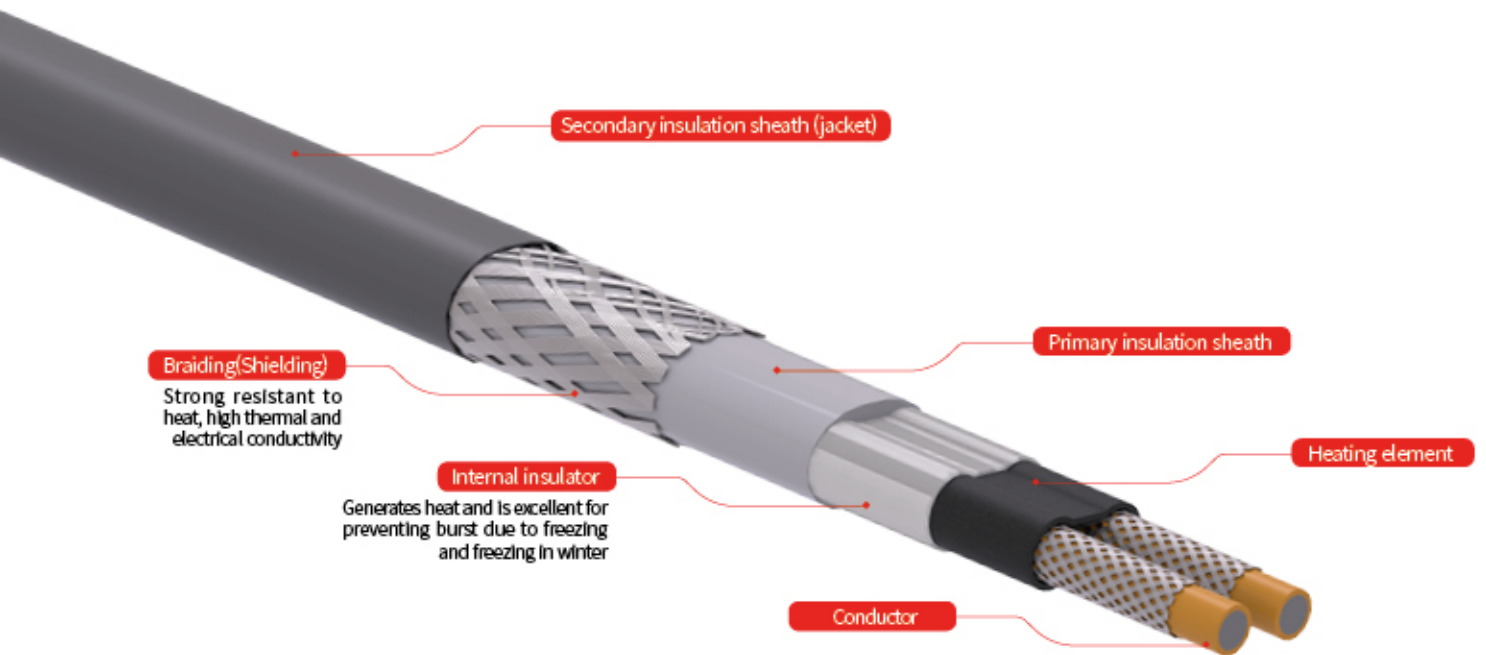
# No problem in any environment! *Smart heating specialist*

## Can be installed anywhere you want

The fixed temperature wire for roof snow melting has strong UV-resistant properties thanks to the addition of a UV stabilizer, which prevents the product from sunlight due to outside exposure, and hence, has excellent durability.

This cable is designed to minimize structural loss and various types of roof damage caused by snow loads.

### Structure of fixed temperature wire for roof snow melting (GR 40-2CR)



**1 Conductor**  
Supplies power  
Tin-plated copper wire, asbestos wire, TA

**2 Heating element**  
Semiconductor heating element with PTC characteristics formulated with a semiconductive polymer material that forms an infinite parallel circuit

**3 Internal insulator**  
Helps prevent the reduction of heat generated, underwent a high-temperature heat treatment process

**4 Braiding**  
Protects the cable from external shocks, improves traction and shields electromagnetic waves.

**5 Primary insulation sheath**  
Provides mitigation against external thermal and physical shock Polyester (Bare Type)

**6 Secondary insulation sheath (jacket)**  
Provides protection against external physical shock Polyolefin (CR Type), Fluorine resin (Teflon, CT Type)



# No problem in any environment! *Smart heating specialist*

## Can be installed anywhere you want

The fixed temperature cable for melting snow and deicing is a cable to prevent damage to people and vehicles due to freezing of the road surface in winter, and can be installed at the entrance of roads and parking lots or in snow-prone areas. It can be used semi-permanently once constructed.

### | Structure of fixed temperature wire for snow melting (FM 60-2CR)



**1 Conductor**  
Supplies power  
Tin-plated copper wire, asbestos wire, TA

**2 Heating element**  
Semiconductor heating element with PTC characteristics formulated with a semiconductive polymer material that forms an infinite parallel circuit

**3 Internal insulator**  
Helps prevent the reduction of heat generated, underwent a high-temperature heat treatment process

**4 Braiding**  
Protects the cable from external shocks, improves traction and shields electromagnetic waves.

**5 Primary insulation sheath**  
Provides mitigation against external thermal and physical shock Polyester (Bare Type)

**6 Secondary insulation sheath (jacket)**  
Provides protection against external physical shock Polyolefin (CR Type), Fluorine resin (Teflon, CT Type)

# A company you can trust! Enerpia

Certificates of Enerpia



Certificate Of Patent  
(No. 10-1746775)



Letter of Q-Mark  
designation



Russia GOST Standard



CU (Russia compulsory  
certification)



CE



G-PASS certificate



Quality management  
system certificate



Environmental management  
system certificate



Certificate of the  
company-affiliated  
research institute



Letter of designating as  
a promising export SME



Letter of pre-star  
company designation



Membership card of  
the Korea International  
Trade Association



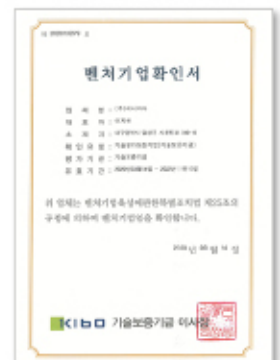
Design registration  
certificate



Design Registration/  
Inno-Biz



Certificate of the  
company specialized in  
material parts



Venture company  
certificate



# The only Company in the Field That carries out the whole process of Manufacturing to Construction

## | Construction method

Enerpia provides convenience to our customers with our total solution - from design to repairs after construction completion.



# Enerpia is creating a safe space. *Smart heating specialist*

Protect yourself from frequent facility disasters such as burst from the freezing of meters, water lines, and pipes in winter with the Enerpia freeze / burst from freezing prevention system at an affordable cost. The fixed temperature wire has a long life, so the longer you use it, the more economical it becomes.

| Installation recommended in various places.

Enerpia fixed temperature wire for freeze / burst from freezing prevention is suitable for places **where boiler installation is inconvenient, and where temperature maintenance and freeze protection is needed (various pipes, refueling and hot water lines).**



Various external piping



Fuel piping



Pipe, water meter







Heating facilities of various tanks



The center of global connection!  
It all starts here, in **Korea.**

Enerpia is a global company  
that has **successfully entered  
markets in 28 countries.**

Enerpia is a **global company** that has successfully entered markets in  
**28 countries** including Russia and Europe.

Enerpia established local factories in  China,  Uzbekistan,  Kyrgyzstan,  Russia.



*Smart heating  
specialist*

# ENERPIA HEATING SYSTEM

A new revolution! An eco-friendly heating system

A company completed with its extensive experience and patented technologies

Enerpia puts customers and the environment first





*Smart heating  
specialist*

# ENERPIA HEATING SYSTEM

The only company in the industry that both  
manufactures and constructs the product

Enerpia provides convenience to our  
customers with our total solution - from design  
to repairs after construction completion.



| **Main office** . 349-13, Samunjin-ro, Hwawon-eup, Dalseong-gun, Daegu

| **Tel.** +82-53-474-8050 | **Fax.** +82-53-473-8050

| **E-mail.** info@enerpia.co.kr

| **China Branch** . Xiguozhuang Industrial Park, Chengyang District,  
Qingdao City, Shandong Province, China

**URL.** [www.enerpia.com](http://www.enerpia.com)

To get more **news on ENERPIA?**

You can get in touch quickly and easily.  
Click the address below.

 **Facebook**  
<https://www.facebook.com/enerpia.enerpia>

 **Instagram**  
[https://www.instagram.com/enerpia\\_smart\\_heating/](https://www.instagram.com/enerpia_smart_heating/)

 **YouTube**  
<https://www.youtube.com/channel/UCEEg1tQwwwjTs5b7FnyTbSQ>

 **Naver blog**  
[https://blog.naver.com/dw\\_enertec](https://blog.naver.com/dw_enertec)