

ABAN HEAT TRACE GROUP

We provide engineering services
from initial design up to turnkey
project execution.

Complete engineering up to commissioning.

www.heating-cable.ir

HEAT TRACING SYSTEM

CONTROL & MONITORING

2020.v1



02/07/30



TÜVRheinland®
Genau. Richtig.





About us

ABAN HEAT TRACE GROUP is an esteem established company in Tehran-Iran with the core of high of expert and engineers of more than 20 years of experience in electrical heat trace projects .

A.H.T.G Activities have been proceeded in mains below branches:

- Production of special heat tracing accessories for industrial and domestic application.
- System Design and Engineering of any heat trace project specially in Oil & gas, Petrochemical, Food and Metal industry.
- Installation & Commissioning of heat tracing system included heating cable, accessories and thermal insulation
- Training courses for experts that working in the projects and who that interested heat trace knowledge
- Supply the highest quality brands of heat tracing cable from the most famous European and American manufacturers.

Base on valuable experience of the experts and engineers **A.H.T.G** is ready to cooperate with the industrial and domestic sector regarding the heat tracing projects.



Industrial



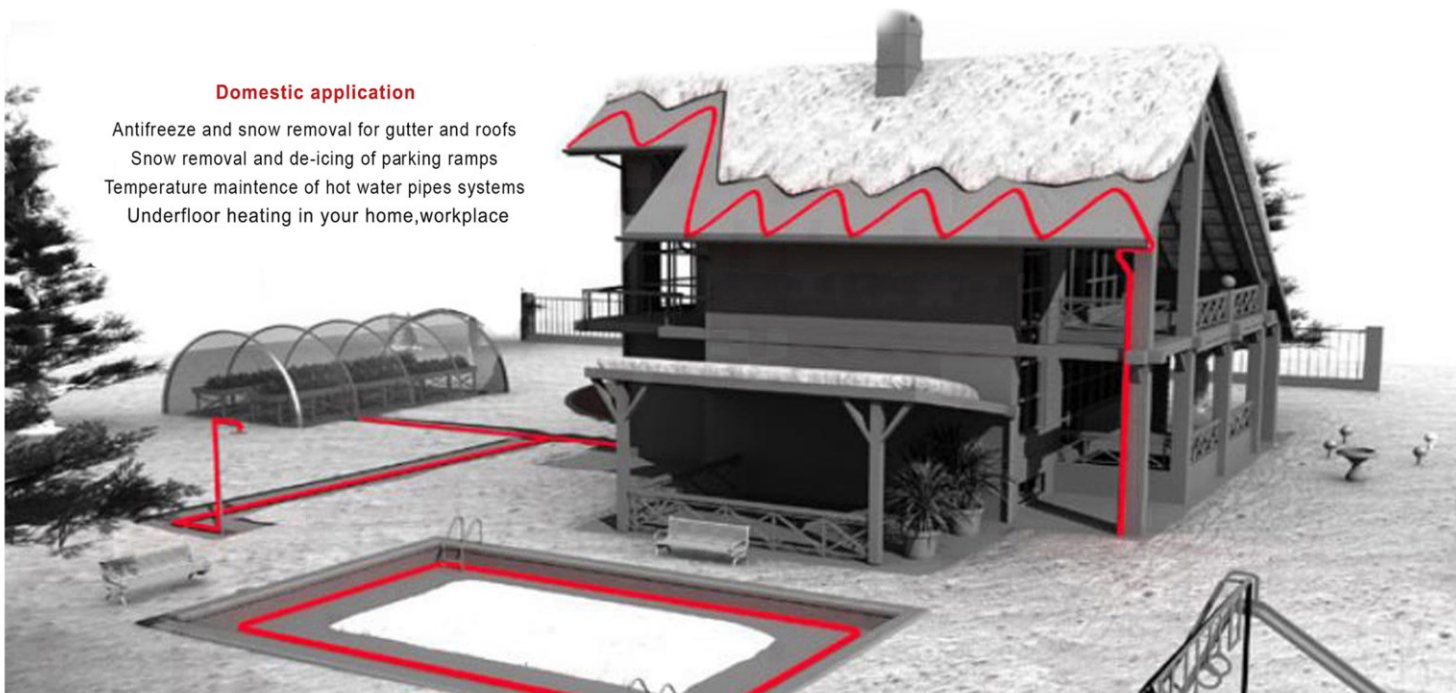
For industrial applications

- Freeze protection and temperature maintenance of pipes.
- Surface heat tracing of balloons and tanks.
- Anti-condensation in hoppers.

Domestic

Domestic application

- Antifreeze and snow removal for gutter and roofs
- Snow removal and de-icing of parking ramps
- Temperature maintenance of hot water pipes systems
- Underfloor heating in your home, workplace



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A.N.E Self-Regulating heating cable

A.N.E Code	Product Picture	Dimensions (mm)	Bus wire	Power (w/m)	Material	Maximum Maintain Temperature	Exposure Temperature	Minimum Installation Temperature	Maximum Usage Length (Based on 220V)
301- 20		12.8*5.8	16 AWG	20	Bus wire: Tinned copper Conductor: PTC Insulation: Inner Shield: tinned copper braid Jacket: Thermoplastic (5 Layer)	65°C	85°C	-40°C	151
301- 30				30					98
301- 40				40					72
311- 11		10.4*5.3	18 AWG	11	Bus wire: Tinned copper Conductor: PTC Insulation: Thermoplastic Shield: tinned copper braid Jacket: Thermoplastic (5 Layer)	65°C	85°C	-40°C	145
311- 17				17					120
311- 23				23					100
401- 16		10.7*4.5	16 AWG	16	Bus wire: Tinned copper Conductor: PTC Insulation: Inner Shield: tinned copper braid Jacket: Thermoplastic (5 Layer)	65°C	85°C	-40°C	151
401- 30				30					98
401- 40				40					72
411- 35		13.3*6.1	16 AWG	35	Bus wire: Tinned copper Conductor: PTC Insulation: Thermoplastic Shield: tinned copper braid Jacket: fluoropolymer (5 Layer)	110°C	135°C	-40°C	100
411- 45				45					85
411- 60				60					70
412- 30		10.6*4.6	16 AWG	30	Bus wire: Tinned copper Conductor: PTC Insulation: Thermoplastic Shield: tinned copper braid Jacket: fluoropolymer (5 Layer)	120°C	200°C	-40°C	130
412- 45				45					90
412- 60				60					70

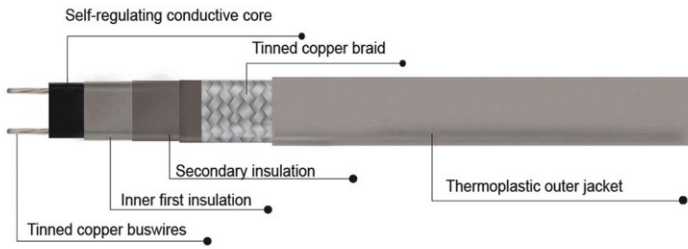
A.N.E: ABAN NIROYO ENERGY



Self-regulating heating cable

A.N.E 301

2 YEARS Warranty



Introduction

A.N.E 301 Constructed of a semi-conductive heater matrix extruded between parallel bus wires, a self-regulating cable adjusts its output to independently respond to ambient temperatures all along its length. As temperature increases, the heater's resistance increases, which lowers the output wattage. Conversely, as the temperature decreases, the resistance decreases and the cable produces more heat. So thermostat is not necessary in some applications. It will never overheat or burnout even when overlapped. The cable can also be cut to any length. As the result, we got an energy efficient heating cable. This self-regulating heating cable is resistant to watery and inorganic chemicals and protected against abrasion and impact damage.

Technical Data

Output Wattage	16, 20, 30, 40(w/m)
Maximum maintain temperature	65C°
Maximum exposure temperature	85C°
Minimum installation temperature	-40C°
Work voltage	110V-120V / 220-240V
Max resistance of braid	≤18.2 Ω /km
Bus wire gauge	16AWG
Approvals	CE,EAC,EACEX,ATEX

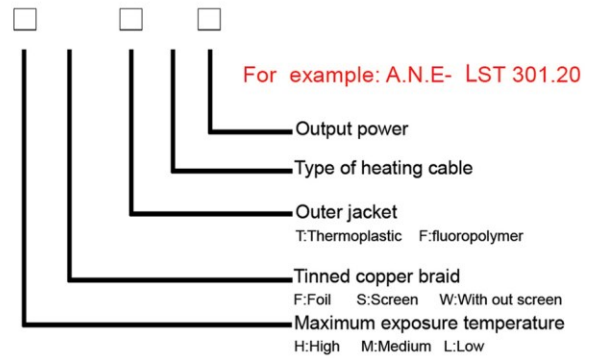
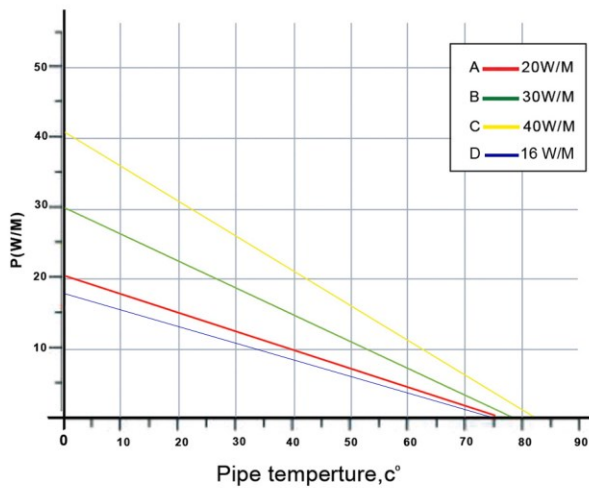




Application

A.N.E 301 Self-regulating heating cable is ideally used for process temperature maintenance and frost protection of regular diameter pipelines, tanks, valves, flanges, roof & gutter de-icing, snow melting and other applications of low temperature working conditions.

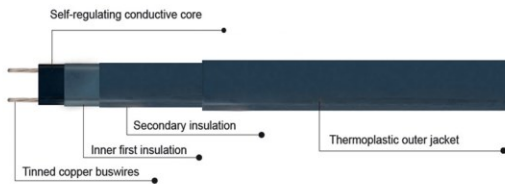
It is suitable for hazardous area, and cable with outer thermoplastic jacket can also be used in hazardous area. The cable with UV stabilized thermoplastic elastomer outer jacket is provided to cover the braid for wet applications and exposure to the sun.



Nominal power Output @ +10 C, 230 Vac		
Code	Type	Value W/m
A	ANE-301.20	20
B	ANE-301.30	30
C	ANE-301.40	40
D	ANE-301.16	16

Flame retardant thermoplastic outer jacket protects against certain inorganic chemical solutions, it also protects against abrasion and impact damage.

PART NUMBER	Output power +10C@(w/m²)	Maximum Maintain Temperature (°C)	Max lenght @+10 C° 16/30A (m)	Max lenght @+0 C° 16/30A (m)	Max lenght @-20 C° 16/30A (m)	Dimension (mm)	Weight (kg/100m)
A.N.E 301.16	16	65	110/151	100/124	86/98	12.8*5.8	11.5
A.N.E- 301.20	20	65	89/118	75/94	63/80	12.8 * 5.8	11.5
A.N.E- 301.30	30	65	71/98	60/77	52/65	12.8 * 5.8	11.5
A.N.E- 301.40	40	65	62/72	52/60	45/53	12.8 * 5.8	11.5



Introduction

A.N.E 401 Constructed of a semi-conductive heater matrix extruded between parallel bus wires, a self-regulating cable adjusts its output to independently respond to ambient temperatures all along its length. As temperature increases, the heater's resistance increases, which lowers the output wattage. Conversely, as the temperature decreases, the resistance decreases and the cable produces more heat. So thermostat is not necessary in some applications. It will never overheat or burnout even when overlapped. The cable can also be cut to any length. As the result, we got an energy efficient heating cable. This self-regulating heating cable is resistant to watery and inorganic chemicals and protected against abrasion and impact damage.

Technical Data

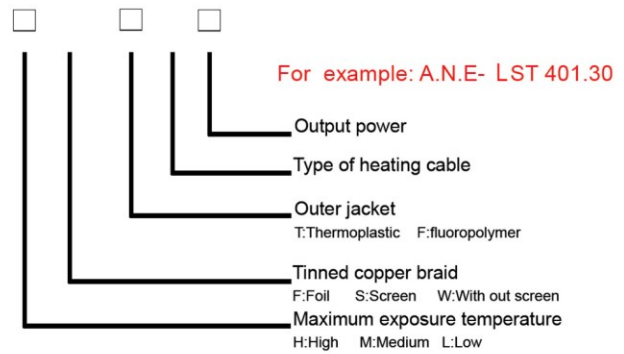
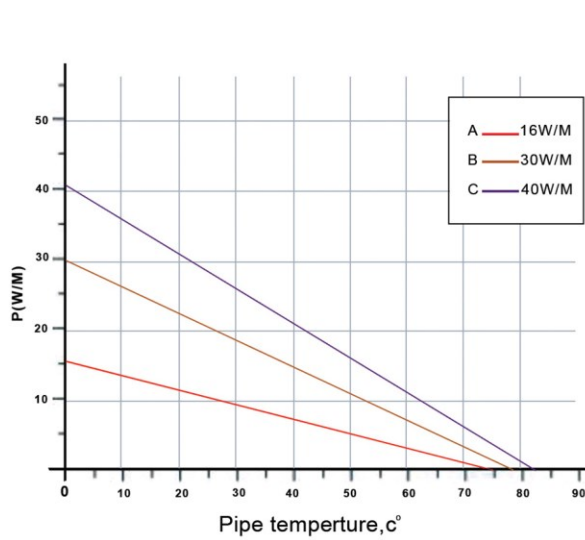
Output Wattage	16, 30, 40(w/m)
Maximum maintain temperature	65C°
Maximum exposure temperature	85C°
Minimum installation temperature	-40C°
Work voltage	110V-120V / 220-240V
Max resistance of braid	≤18.2 Ω /km
Bus wire gauge	16AWG
Approvals	CE,EAC,EACEX,ATEX



Application

A.N.E 401 Self-regulating heating cable is ideally used for process temperature maintenance and frost protection of regular diameter pipelines, tanks, valves, flanges, roof & gutter de-icing, snow melting and other applications of low temperature working conditions.

It is suitable for hazardous area, and cable with outer thermoplastic jacket can also be used in hazardous area. The cable with UV stabilized thermoplastic elastomer outer jacket is provided to cover the braid for wet applications and exposure to the sun.



Nominal power Output @ +10 C, 230 Vac		
Code	Type	Value W/m
A	ANE-401.16	16
B	ANE-401.30	30
C	ANE-401.40	40

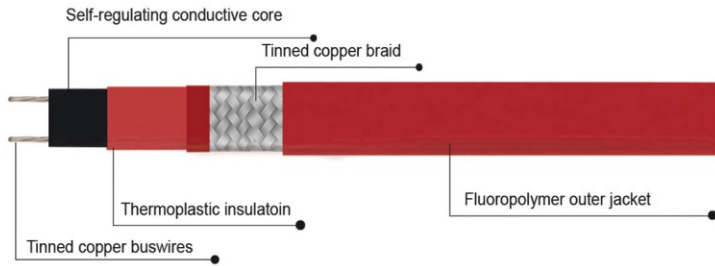
PART NUMBER	Output power +10C@(w/m ²)	Maximum Maintain Temperature (C°)	Max lenght @+10 C° 16/30A (m)	Max lenght @+0 C° 16/30A (m)	Max lenght @-20 C° 16/30A (m)	Dimension (mm)	Weight (kg/100m)
A.N.E- 401.16	16	65	110/151	100/124	86/98	10.7 * 4.5	7.25
A.N.E- 401.30	30	65	71/98	60/77	52/65	10.7 * 4.5	7.25
A.N.E- 401.40	40	65	62/72	52/60	45/53	10.7 * 4.5	7.25



Self-regulating heating cable

A.N.E 411

2 years warranty



Introduction

A.N.E 411 is Middle Temperature Self-regulating Heating Cable, Constructed of a semi-conductive heater matrix extruded between parallel bus wires, a self-regulating cable adjusts its output to independently respond to ambient temperatures all along its length.

As temperature increases, the heater's resistance increases, which lowers the output wattage.

Conversely, as the temperature decreases, the resistance decreases and the cable produces more heat.

So thermostat is not necessary in some applications.

It will never overheat or burnout even when overlapped.

The cable can also be cut to any length. As the result, we got an energy efficient heating cable.

Technical Data

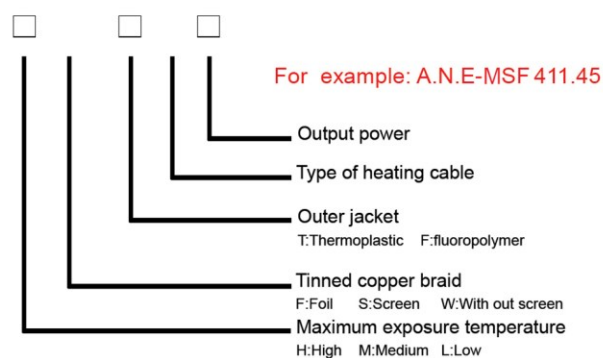
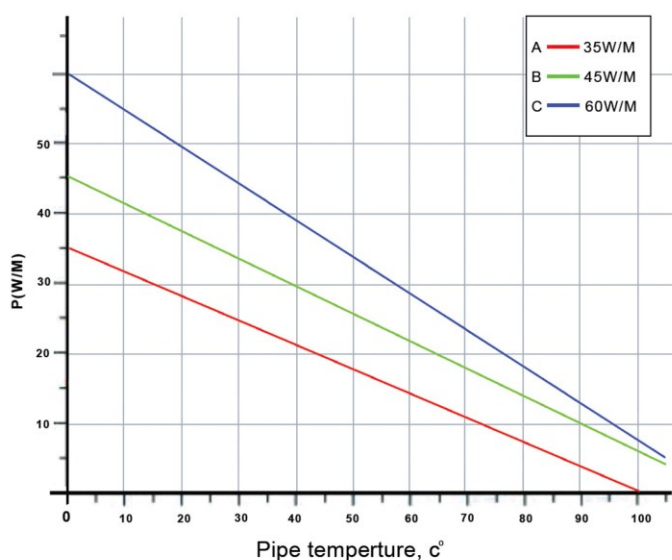
Output Wattage	35, 45, 60(w/m)
Maximum maintain temperature	110C°
Maximum exposure temperature	135C°
Minimum installation temperature	-40C°
Work voltage	110V-120V / 220-240V
Max resistance of braid	≤18.2 Ω /km
Bus wire gauge	16AWG
Approvals	CE ,EAC,EACEX,ATEX



Application

A.N.E 411 Self-regulating heating cable is ideally used for process temperature maintenance and frost protection of large diameter pipelines, tanks, valves, flanges, and other industrial applications of high heat loss issues.

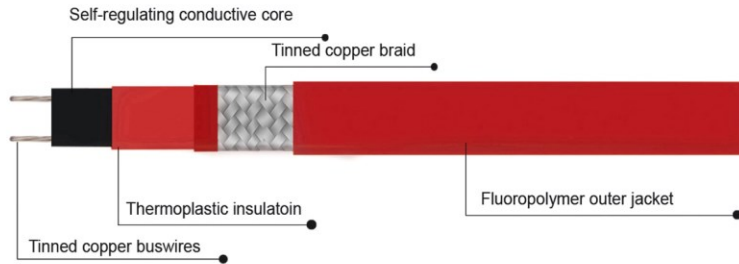
It is suitable for hazardous area, and cable with fluoropolymer outer jacket can also be used in hazardous area and corrosive area.



Nominal power Output @ +10 C, 230 Vac		
Code	Type	Value W/m
A	ANE-411.35	35
B	ANE-411.45	45
C	ANE-411.60	60

Fluoropolymer outer jacket is used for exposure to organic or corrosive working conditions or vapor may exist.

PART NUMBER	Output power +10C°@(w/m²)	Maximum Maintain Temperature (C°)	Max lenght @+10 C° 16/30A (m)	Max lenght @+0 C° 16/30A (m)	Max lenght @-20 C° 16/30A (m)	Dimension (mm)	Weight (kg/100m)
A.N.E- 411.35	35	110	75/100	65/90	45/60	13.3 * 6.1	12.5
A.N.E- 411.45	45	110	60/85	50/75	35/50	13.3 * 6.1	12.5
A.N.E- 411.60	60	110	50/70	40/60	30/45	13.3 * 6.1	12.5



Introduction

412 Series Self-Regulating Heating Cables provide the most variety in heat trace designs and applications.

Constructed of a semi-conductive heater matrix extruded between parallel bus wires, a self-regulating cable adjusts its output to independently respond to ambient temperature all along its length .

As temperature increases, the heater's resistance increases , which lowers the output wattage.

Conversely, as the temperature decreases , the resistance decreases and the cable produces more heat.

So thermostat is not necessary in some applications. It will never overheat or burnout even when overlapped.

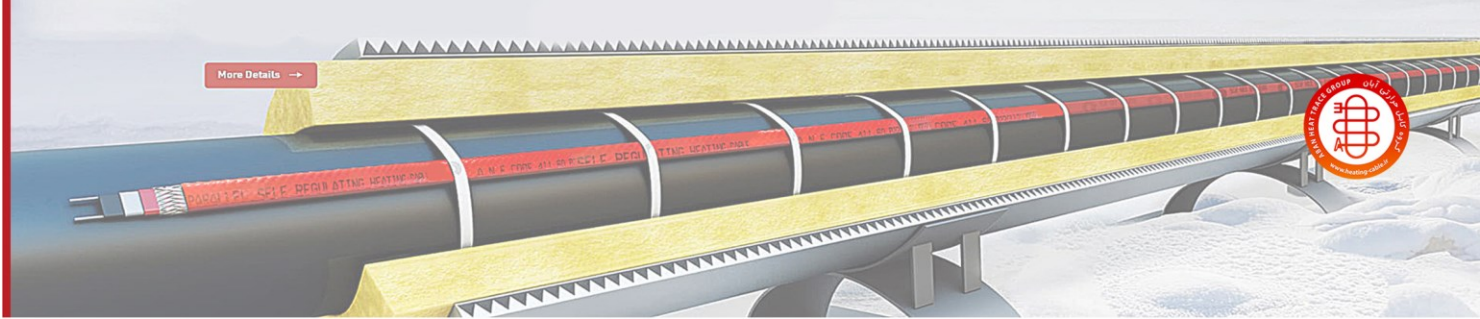
The cable can also be cut to any length . As the result, we got an energy efficient heating cable.

With optional outer jackets, the heating cable is resistant to watery and in organic chemicals and protect against abrasion and impacted damage

Technical Data

Output Wattage	30, 45, 60(w/m)
Maximum maintain temperature	120C°
Maximum exposure temperature	200C°
Minimum installation temperature	-40C°
Work voltage	220-240V
Max resistance of braid	≤18.2 Ω /km
Bus wire gauge	16AWG
Approvals	Exe IIC Gb T4 Ext IIIC Db T4 Ex CE PC



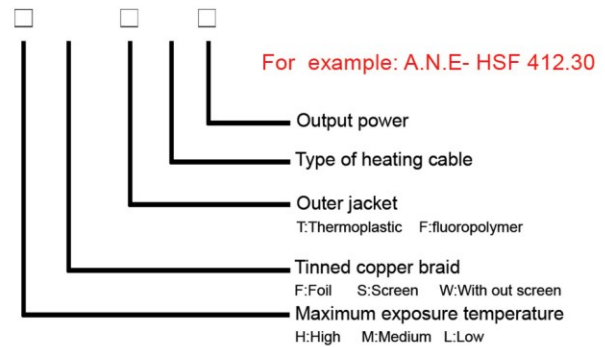
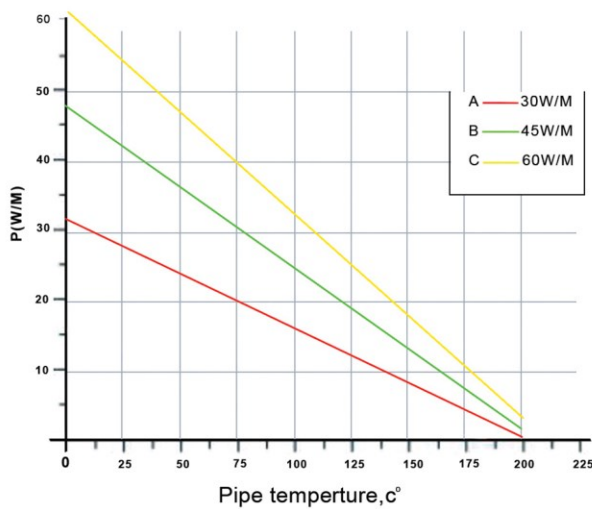


Application

ANE 412 series self-regulating heating cables are suitable for: defrosting and temperature remaintenance of pipes tanks valves, flanges, roof melting and snow melting, and heating requests that require high power output.

Also suitable for: applications in explosion-proof and applications in explosion-proof and corrosive environments.

ANE 412 series self-regulating heating cable can with stand the highest exposure temperature up to 215 °C (419 °F) and the highest maintain temperature can reach 125 °C (257 °F).



Nominal power Output @ +10 C, 230 Vac		
Code	Type	Value w/m
A	ANE-412.30	30
B	ANE-412.45	45
C	ANE-412.60	60

PART NUMBER	Output power +10C@(w/m ²)	Maximum Maintain Temperature (C°)	Max lenght @+10 C° 16/30A (m)	Max lenght @-20 C° 16/30A (m)	Max lenght @-40 C° 16/30A (m)	Dimension (mm)	Weight (Kg/100m)
A.N.E- 412.30	30	120	85/114/130	69/100/114	62/88/103	10.6*4.6	11- 12 kg
A.N.E- 412.45	45	120	70/82/90	49/75/82	44/67/73	10.6*4.6	11- 12 kg
A.N.E- 412.60	60	120	50/64/70	38/58/64	35/53/59	10.6*4.6	11- 12 kg



Series connection constant wattage heating cable

A.N.E 106

2 years warranty

A.N.E 106 Series connection constant wattage heating cable use the core conductor as the heating element, when the core conductor connect to power supply, the core conductor will send out joule heat, same as they are of the entire cable length, the heating value of each unit is the same.

This will not result in a situation that the power in the terminal end is lower than it is in the beginning end as the heating cable length increases. So this type is suitable for long pipe-line and large diameter pipeline's heat tracing and heat preservation. Power supplied by one power point.

For Chemical Or Natural Gas Pipeline Series Resistance Heating Cable.

Technical data

Min. Installation Temperature	-40°C
Rated Voltage	110V-120V 220V-380V 660V 1100VMax.
withstand temperature	J3 - 205°C, J4 - 250°C
Dielectric strength	2 x nominal voltage + 2500VOuter
Dimensions	5.9*12.5mm
Insulation resistance	≥750MΩ/Km
Certifications	CE, EAC, EACEX, ATEX

Part Number	Core conductor's structure	Cross section mm ²	Resistance M/km@20 °C
A.N.E-J3.3.0	19*0.45	3	5.83
A.N.E-J3.4.0	19*0.52	4	4.87
A.N.E-J3.5.0	19*0.58	5	3.52
A.N.E-J3.6.0	19*0.64	6	2.93
A.N.E-J3.7.0	19*0.69	7	2.51
A.N.E-J4.3.0	19*0.45	3	5.83
A.N.E-J4.4.0	19*0.52	4	4.87
A.N.E-J4.5.0	19*0.58	5	3.52
A.N.E-J4.6.0	19*0.64	6	2.93
A.N.E-J4.7.0	19*0.69	7	2.51

7 layer parallel constant wattage self limited heating cable

A.N.E 109

2 years warranty

ANE 109 Parallel constant wattage self limited heating cable can be used for pipe and equipment freeze protection and process temperature maintenance requiring high power output or high temperature exposure. This type provides an economical alternative to self-regulating heating cable but requires more skill for installation and more advanced control and monitor system. Constant wattage heating cables can provide process temperature maintenance up to 150°C and can withstand exposure temperature up to 205°C with power on.

Structure

ANE109 Single phase constant wattage heating cable used to freeze protection, heat preservation for all kinds of pipelines and instruments. Application such as factory Zone 1 Zone 2 explosive gas atmosphere area.

Working principle

Two paralleled stranded copper wire as the bus wires with insulation layer FEP, then wrap the nickel-chromium alloy as the heating wire connect with bus wires at regular intervals, form the parallel resistance, finally covered with insulation jacket FEP.

When the bus wires power on, each parallel resistance begins to heat, this form a continuous heating cable.

Tinned copper stranded



1. Wire
2. FEP insulation layer
3. FEP insulation layer
4. Ni-Cr alloy wire
5. PEP insulation layer
6. Tinned copper Metal braid
7. FEP outer sheath

Rated Voltage: 220V

Normality insulation resistance: > 20M ohm

Dielectric strength: 2000V 50Hz/I min

Max exposure temperature: 205 0 c

Protection level: IP54

ANE CODE	Rated power	Max usage	Max Maintenance Temperature(C)	Sheath color
A.N.E 109.10	10	210	150	Black
A.N.E 109.20	20	180	120	Orange
A.N.E 109.30	30	150	90	Blue
A.N.E 109.40	40	140	65	Red



Application

Ground heating of building, refrigerators and were houses, Chute heating, gutter and roof defrosting.

General purpose up to 200 °C

Description

Good temperature resistance. The whole body uses silicone rubber as the insulation (including power cord), and work environment temperature is -60 to ±200 C.

Good heat-conducting property: Generate heat energy by passing to directly conduct heat, high thermal efficiency, capable of heating in short time to achieve the effect.

Reliable electrical property: when each heat tape leaves the factory, conduct strict DC resistance, soaking high pressure, insulation resistance and other tests to ensure quality.

Firm structure, flexibility and easy bending: combine the whole cooling end section, no binding point, easy installation.

Strong design ability: heating length, lead wire length, rated voltage and power are determined by users.

Product Structure

1. Heating wires are two tinned copper wires with section of 0.75 mm².
2. Isolated layer is made of silicone rubber by extrusion.
3. High strength alloy wire spiral and silicon rubber surface are the heating center.
4. Airtight cladding made by extrusion method.
5. Immersion withstand voltage 3500 V AC
6. Insulation Resistance ≥ 200 mm²



A.N.E CODE	108.20	108.30	108.40	108.60	108.80
Voltage	36 V-240 V	36 V-240 V	36 V-240 V	36 V-240 V	36 V-240 V
Busbar size	0.75 mm	0.75 mm	0.75 mm	1 mm	1 mm
Wire insulation material	silicone rubber	S.R	S.R	S.R	S.R
heating body alloy	Cu-Ni	Cu-Ni	Cu-Ni	Cu-Ni	Cu-Ni
heating coil external insulation	silicone rubber	S.R	S.R	S.R	S.R
heating body	5mm*7mm	5mm*7mm	5mm*7mm	6mm*8mm	6mm*8mm
use longest limit	65 m	50 m	44 m	40 m	38 m
Distance between nodes	0.3 m	0.3 m	0.5 m	0.5 m	0.5 m



Flexible silicone heating cable

A.N.E 107

2 years warranty

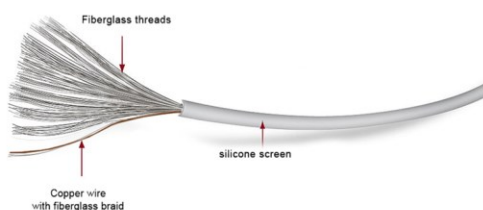
A.N.E 107 silicone heating cable is of good waterproof performance, can be used for heating, heat tracing and heat preservation of pipelines, pots and tanks of industrial equipment or laboratory in moist places without explosive gas.

- It is mainly composed of nickel-chromium alloy wires and insulating material, and has fast heating speed, high heat efficiency and long service life.
- fiber glass core is wound with electric heating wires, silicone rubber is used as main insulation, the heat resistance performance is excellent, and the insulation performance is reliable.
- It has great flexibility, and can be directly wound on a to be heated device, with good contact and uniformity heating.

Application:

- 1.Refrigerators, air conditioners, freezers defrost
2. Rice cooker heat preservation
- 3.Electric blanket
- 4.Electric heating cushion
- 5.Electric massage chair
- 6.Medical and beauty equipment
- 7.Electric thermal clothing
- 8.Electric heating shoes
- 9.Bath pool heat
- 10.Footbath heat
- 11.Pipeline and tank insulation antifreeze
- 12.Car window heat and etc.

Technical data of Silicone heating cable	
Out Diameter(mm)	2 ~ 5
Heating wire material	Nichrome or CuNi
Insulating Layer	Silicone rubber
Resistance (ohm/m)	10 ~ 30
Temperature (°C)	30 ~ 180
Voltage	220 V
Insulation resistance	>100MΩ





MI cables are made in special manufacturing process taking a single or several heating alloy as the heating source, electric melting crystal magnesium oxide of high purity and high temperature as the thermal insulator and seamless stainless steel or copper tube as the sheath. PE sheath or that with low smoke and zero halogen can be added in the place exposed in strong corrosion.

- **MI heating cables with stainless steel sheath**

MI heating cables with stainless steel sheath can be used in the environment of high temperature and great heating power (up to 269 w/m). Its maximum temperature resistance can be up to 600 C, the resistance of conductor is within 28000-19.2Ω/km.

MI cables are of excellent mechanical strength and corrosion proof.

- **MI heating cables with copper sheath**

MI heating cables with copper sheath can be used in the environment of high temperature and for long pipe transmission. Its maximum temperature resistance can be up to 250 C, the resistance of conductor is within 480-0.5Ω/km; as for those to be corrosion protected or buried underground, HDPE sheath (MIHC) shall be added, the maximum temperature resistance of MIHC can be up to 90 C; MI cables are of excellent mechanical strength.

- **MI heating cables with copper nickel alloy sheath**

MI heating cables with copper nickel alloy sheath can be used in the environment of high temperature and for long pipe transmission. Its maximum temperature resistance can be up to 400 C, the resistance of conductor is within 28000-19.2Ω/km; MI cables are of excellent mechanical strength and corrosion proof product standards

Comply with IEC800 (92) Heating Cables with a Rated Voltage of 300/500 V for Comfort Heating and Prevention of Ice Formation for cables with maximum heating temperature less than 250 C and comply with the enterprise standard for those above 250 C.

Tolerance of resistance: $\pm 10\%$

Dielectrically property – withstand voltage of heating cable: 1200VAC/1min

Insulation resistance – test of finished products: 100MΩ/500VDC

Continuity of sheath – the insulation resistance shall be tested after soaking the whole heating cable in water for 12h (including joints), and the value must be 50MΩ/500VDC at least

Product Structure



1. Outer Sheath: SS321, 825 Alloy, Copper, Copper-Nickel Alloy
2. Mineral insulation
3. Alloy resistance wire

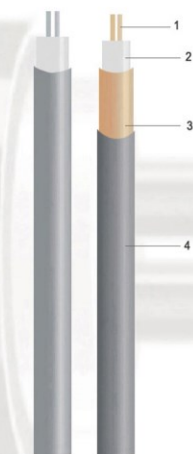
Features

- Constant Wattage Series Resistance Heating Cable Sets
- Process Temperature Maintenance up to 900 C°
- Maximum Exposure Temperature 648 C° (Power Off)
- Corrosion Resistant Stainless Steel Sheath
- Factory Assembled Cable Sets— Ready for Installation
- Fully Annealed Sheath allows Field Bending
- For Use on Metallic Pipes Only



Product Construction

1 One or two conductor	Heating elements
2 First insulation	Mgo provides insulation of the resistance wire for voltage up to 593C
3 Inner jacket	This alloy has excellent resistance to pitting, chloride-stress, acid and alkali corrosion.
4 Outer jacket	For corrosive environments or extra ruggedness when embedded in concrete.





There are many advantages when using Mineral Insulated (MI) Cable as bellow:

- Installation: MI cables are round and are annealed, making them easy to form and to install.
- Heat Output: MI cables are constant output, providing uniform heat over the entire length of the cable. So MI cables are best choice Especially for heat trace of transmission pipes that have high-viscosity and high-speed materials.
- Inrush: MI cables are constant wattage, eliminating the need to oversize the breakers to allow for inrush current.
- Terminations: MI cables are terminated in a controlled Factory environment and tested to insure their integrity and that they are moisture proof.
- Fire Safety: MI cables are manufactured from nonflammable materials and damaged or defective product will not cause a fire or safety concern.
- Degradability: MI cables are made on inorganic materials that will not degrade.
- System Life: MI cables have a life expectancy of 25 to 30 years. But Self-Regulating cables have a life expectancy of 8 to 10 years.
- Corrosion: MI cable consists of one or two solid conductor heating elements, embedded in a highly compressed magnesium oxide or 321 and higher stainless steel base on NACE standard, So MI cables used has a high resistance to corrosive and acidic environments compared to other cables.





ABAN HEAT TRACE GROUP electrical trace heating cables, are used to counteract the effects of heat lost from process pipe and tanks equipment.

This dissipation allows a drop in temperature, bringing about unacceptable consequences such as frozen pipes, reduced fluid viscosity, etc.

The use of heat trace cable replaces the heat lost, maintaining the desired temperature through the application of the required wattage.

There are two general categories of Electrical Heat Trace Cable:

Constant Wattage and Self-Limiting, or Self-Regulating cable

Each style of heat trace cable serves different applications.

Which cable do i need?

Selecting the proper cable depends on many different factors such as:

The pipe size, exposure temperatures, ambient conditions, insulation type and thickness, maintenance temperatures, heat up rate, the corrosiveness of the environment, flow rate, and type of material involved all play a part in determining which cable is best for your application. This product catalog will help you make the best choice.

Differences of Constant wattage cable & Self-regulating cable

Constant Wattage Heating Cable: This style of heat trace cable is designed to put out a certain amount of wattage per linear foot at a particular voltage. It is always putting out the designed watts per meter, no matter what the surface or ambient temperature is. This means that in most situations, the heating cable is continually pumping heat into the vessel or pipe being maintained or heated. In some types, if the heat trace cable is not attached to some kind of control device, it has the potential to overheat itself. This would not only ruin the cable, but could cause damage to whatever it is being used on. So constant wattage cable must be controlled by some means.

Self-Limiting, or Self-Regulating Cable:

This cable will self-adjust its power output in relation to the surface temperature as well as ambient conditions.

In other words, the hotter the conditions get, the lower the wattage output becomes.

This characteristic allows this type of cable to be used without a control device. However, if a particular temperature is required, then a control device must be used.

Higher temperature maintenance, and long pipes and higher maximum exposure temperatures will use the constant wattage cables.

Lower temperature maintenance applications, like freeze protection, can use the self-limiting cable, although constant wattage cable can be used too.

Electrical underfloor heating system is easy to install, economical to run and is environmentally friendlier than many alternatives, reducing heating bills and it is increasingly becoming recognised as a great energy efficiency measure. The easy of installation of Heat Mat underfloor heating is one of the major benefits of it and each room uses its own thermostat which monitors the floor and air temperature to ensure your room is always exactly the temperature that you require

DOMESTIC DEVISION

ABAN HEAT TRACE GROUP



A.N.E T- mat

2 years warranty

Introduction

T-mat underfloor heating mat used a twin conductor heating cable for easy installation and this mat is with zero EMF. designed for installation into thin adhesive beds, leveling compounds or this screed beds beneath tiled and wooden floor finish.

150w/m² underfloor heating mats are suitable as a primary heating source providing you adequate insulation. These are our most commonly used mats for kitchen, dining rooms, large bathroom and most other areas with tiled floors. 200w/m² underfloor heating mats are generally used in areas where high heat loss is a problem, such as conservatories. these mats are only suitable for under-tiled floors, giving a 25% faster warmer up time.

Features

- Zero EMF
- Self-adhesive mat
- One cold lead 2.5 meter
- Flexible and 100% screened
- Twin conductor heating cable



Technical Data

Cable construction	Twin conductor
Conductor material	Solid heating core
Insulation material	FEP
Insulation optional	TPEE-XLPE
Shield	Aluminum-plastic tape or tinned copper wires
Protective jacket	PVC/FEP
Connector	Out splice
Outer diameter	3.6mm
Rated voltage	230Vac
Power output	150w/m ² , 200w/m ²
Resistance tolerance	+10% / -5%
Certifications	CE ENEC



F-mat underfloor heating mats consist of twin conductor heating cable with fluoropolymer insulation and embed in a reinforced aluminium foil mat.the mat total thickness is ultra-thin, decreasing the floor height and increasing the comfort level.

F-mat underfloor heating mats can be turned to achieve the required floor coverage and multiple mat can be join together to cover large areas.when fitting underfloor heating, a suitable insulation should always be used (especially over concrete sub floors).

80w/m and 150w/m² mats are provided for option. the 150w/m² electric heating system can be used as a primary heat souch, just for floor warming.

Features

- Fully earthed
- Ultra-thin
- Twin conductor heating cable
- One cold lead, 2.5 meter
- Flexible installation



Technical Data

Cable construction	Twin conductor
Conductor material	Solid heating core
Insulation material	Fluoropolymer
Cable spacing	50mm
cable diameter	1.0mm
Connector	Out splice
Min installation temperature	5 C°
Rated voltage	230 Vac
Power output	80w/m ² , 150w/m ²
Resistance tolerance	+10% / -5%
Cold lead	2.5m lenght
Certifications	CE ENEC

A.N.E S- mat

2 years warranty

S-mat underfloor heating mat is designed to be as thin as possible and 100% screend. the cable is designed for installation into thin adhesive beds, leveling compounds or thin screed beds beneath tiled and wooden floor finish. 100 w/m² underfloor heating cable provides a highly economical floor warming system and is used to cover larger areas. 100 w/m² is not suitable as a primary heating source, only to be used as secondary heating for under tiled floors.

150w/m² underfloor heating cable is suitable as a primary heating source providing you adequate insulation.

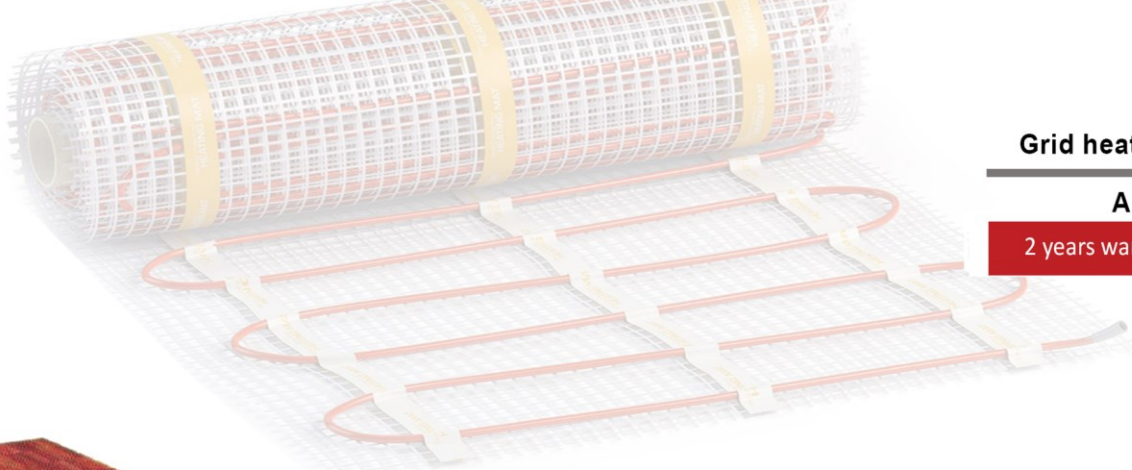
These are our most commonly used mats for kitchen, dining rooms, large bathrooms and most other areas with tiled floors.

- Single conductor heating cable
- Flexible installation
- Emit zero EMF (electromagnetic fields)
- Durable construction
- Two cold leads, 2.5 meters each



Technical Data

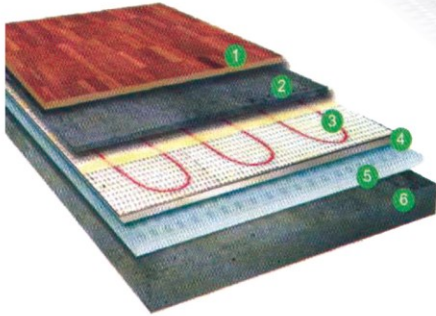
Cable construction	Single conductor
Conductor material	Solid heating core
Insulation material	Fluoropolymer
Shield	Copper wire
Protective jacket	PVC
Connector	Out splice
Outer diameter	2.6mm
Rated voltage	230Vac
Power output	100w/m ² , 150w/m ²
Resistance tolerance	+10% / -5%
Certifications	CE ENEC



Grid heating mat

A.N.E 112

2 years warranty



1. Tile or floor
2. 20 mm cement
3. Heating mat
4. Reflective film
5. 20 mm insulation board
6. Subfloor

Product Picture



Structure	Single Conductor Heating Mats	Double Guide Heating Mats
Glass net	140 g/m ² back apply the double-sided adhesive tape	140 g/m ² back apply the double-sided adhesive tape
Thickness	3 - 5mm	3 - 5mm
Wigth	500 mm	500 mm
Unit area power	100 w/m ² , 150 w/m ²	100 w/m ² , 150 w/m ²
Voltage	220 V(customizable)	220 V(customizable)
Cold line	2*2 m	1*2 m
Cable structure	Single guide	Double conductance
Cable diameter	3mm	4mm
Cable insulation	Teflon (FEP)	Teflon (FEP)
Cable sheath	PVC or customizable	PVC or customizable
Cable shielding	Copper foil+Copper wire	Copper foil+Copper wire
Maximum working temperature	70 C°	70 C°

Foil heating mat

A.N.E 113

2 years warranty

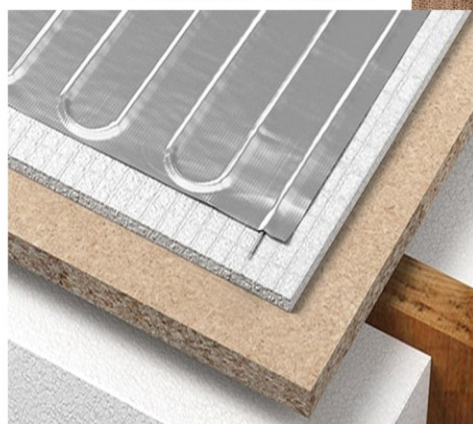
Advantage

- 1.It saves cost and is easy to install
- 2.Aluminum foil material is safe and reliable, which completely avoids the damage to the cable structure and service life of poor quality aluminum plates.
- 3.The heating speed is fast, the temperature is average, the use effect is comparable to the traditional dry installation of electric heating.
- 4.The insulating layer is **FEP** material, which can be widely used in combination with all kinds of floor materials, carpet and other surface materials.



Structure	Double conductor heating mat
Model	T MAT 150
Cable diameter	1.1 m.m ²
Power supply voltage	220V
Length of power cord	2m
shielded grounding	Aluminum foil
Heating conductor	Alloy resistance wire
Insulation	FEP
Maximum working temperature	70 C°

Product Picture





Snow melting mat

A.N.E 114

2 years warranty

Advantages

Cost savings

Saves your annual cost of snow removal and deicing chemical

Time savings

saves your time and effort spent on managing snow manually.

Minimizes personal injury risk

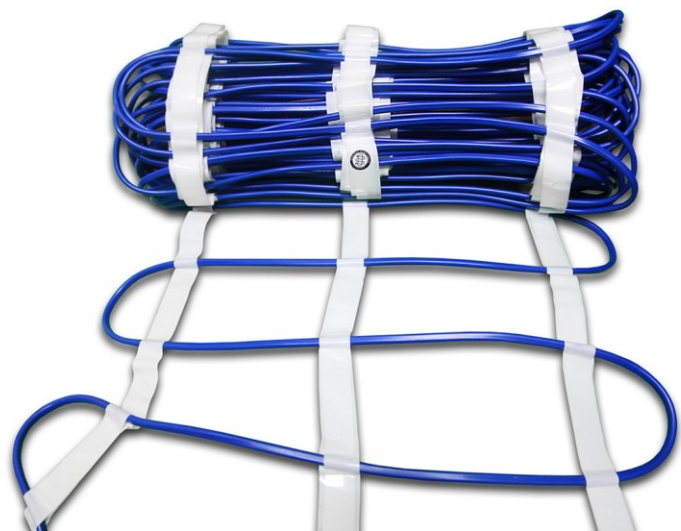
Provides peace of mind by eliminating ice related accidents at your home or office.

Preserves your property

Slows down surface decay due to damage caused by snowplows, shovels, salting and other chemical snow preventives.



Product structure	Technical parameter
Cable construction	Two conductor
Rated voltage	220V
Output power (mats)	300 w/m ²
Heating element size (mats)	Length 2- 20 m *width 0.5m
Cable diameter	7.8 mm
Conductor insulation	Fluoropolymer XLPE
Outer insulation	PVC
Max, insulation temp	105 C°
Min, insulation temp	5 C°
Cold lead	2.5 M

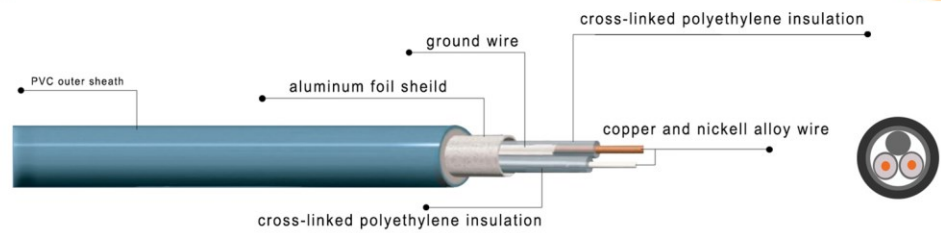


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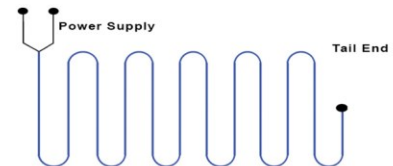
Constant wattage heating cable

A.N.E 110

2 years warranty



There are two heating cores inside the double-conductor heating cable. The tail of the heating connected to form a loop. In construction, only the head end is connected with the power supply and can be placed arbitrarily according to the specific situation, thus greatly reducing the difficulty of construction.



A.N.E CODE	Power (w)	Voltage (v)	Standard length (m)	power per meter (m)	Total resistance (m)
A.N.E 110- 1	3300	220	194.1	17	14.7
A.N.E 110- 2	2800	220	164.7	17	17.3
A.N.E 110- 3	2600	220	152.9	17	18.6
A.N.E 110- 4	2400	220	141	17	20.2
A.N.E 110- 5	2100	220	123.5	17	23.0
A.N.E 110- 6	1700	220	100.0	17	28.6
A.N.E 110- 7	1370	220	80.6	17	35.3
A.N.E 110- 8	1250	220	73.5	17	38.7
A.N.E 110- 9	100	220	58.6	17	48.4
A.N.E 110- 10	840	220	49.4	17	57.6
A.N.E 110- 11	700	220	41.12	17	68.1
A.N.E 110- 12	600	220	35.3	17	80.7
A.N.E 110- 13	500	220	29.4	17	96.8
A.N.E 110- 14	400	220	23.5	17	121.0
A.N.E 110- 15	300	220	17.6	17	161.1



A.N.E 900 Series heating cables is designed for both roof and gutter or ground application.

The twin conductor heating cable for easy installation with zero EMF. Fully screened twin conductor cable with a tough black UV protected PVC outer sheath, to install in out door application such as roof and gutter or ground application. Its round profile makes it simple to install in outdoor applications such as roof and gutter or ground application.

Product advantages

1. Durable and strong structure
2. High water-proofness. IP68
3. Long working life
4. Small size, no increase in floor thickness
5. 100% screened with Zero EMF
6. 100% tested before delivery
7. Free of maintenance
8. Anti-UV

A.N.E 900-30 — 50M

A.N.E 900-20 — 150M

A.N.E 901-30 — 100M



Technical Data

Cable construction	Twin conductor
Conductor	Solid heating core
Insulation	XLPE (Cross linked PE)
Shield	Aluminum-plastic tape and tinned copper wire
Protective jacket	PVC
Connector	Out splice
Outer diameter	6-6.5 mm
Rated voltage	230Vac
Power output	20W/m, 30W/m
Resistance tolerance	+10% / -5%
Certifications	CE



Constant power underfloor double conductor heating cable

A.N.E 108- 18

2 years warranty

A.N.E 108- 18 underfloor heating cable is designed to be as thin as possible, diameter is only 3.6mm.

It has two kinds of power outputs, ensure the economical and energy saving features and decrease the floor level to the maximum extent. Designed for installation under tile, wood floor, marble flooring, usually set up at 100 w/m^2 , 150 w/m^2 and 200 w/m^2

Product advantages

- 1.Durable and strong structure
- 2.High water-proofness, IP68
- 3.Long working life
- 4.2 years warranty
- 5.Small size ,no increase in floor thickness
- 6.100% screened with Zero EMF
- 7.100% tested before delivery
- 8.Free of maintenance



Technical data

Output	12W/m,18W/m
Rated Voltage	230V
Outer Jacket	PVC Outer
dimensions	3.6 mm
Insulation optional	TPEE for T-cable(T), XLPE for T-cable(X)
Insulation material	FEP
Cable structure	Twin conductor
Shield	Aluminum-plastic tape
Cold lead	2.5m
lengthConductor	Solid heating core
Connector	Out splice
Resistance tolerance	+10%/-5%
Certifications	CE,EAC,TUV,CSA

Walking & Ramps heating cable

A.N.E 902 -18

2 YEARS Warranty

ANE 902- 18 heating cable; in winter, when the accumulated snow on walkways, parking garage, loading ramps, stairways and other areas, it will bring problem to people's life.

Electric snow melting systems can keep walkways, parking garage, loading ramps, stairways and other areas free of snow and ice to help prevent slip hazards. Electric snow melting systems provide surface snow melting and anti-icing for concrete surfaces and pavers.

Product Advantages

- * Twin conductor heating cable
- * 100% screened
- * In Coil packaging, cut as needed
- * Zero EMF



Technical Data

Cable construction	Twin conductor
Conductor	Solid heating core
Insulation	Fluoropolymer
Shield	Aluminum-plastic tape and tinned copper wire
Protective jacket	PVC
Connector	Out splice
Outer diameter	5.5-6.0 mm
Rated voltage	230Vac
Power output	20W/m, 30W/m
Resistance tolerance	+10% / -5%
Certifications	CE



A.N.E Code: 1020

LCD thermostat (button type)

Technical data

Voltage: 220V / 230V, 50/60/HZ

Boundary dimension: 90×86×45mm

Temperature control range: 5- 60 C°

Temperature control accuracy: ±1 C°

Maximum load current: 16A

Housing protection: IP20

LCD slanting interface, easier to load WIFI control (OPT), Carrying a temperature sensor.



A.N.E Code: 1030

European standard thermostat (touch type)

Technical data

Voltage: 220V / 230V, 50/60/HZ

Boundary dimension: 90×86×45mm

Temperature control range: 5- 90 C°

Temperature control accuracy: ±1 C°

Maximum load current: 16A

Housing protection: IP20

LCD slanting interface, easier to load WIFI control (OPT), Carrying a temperature sensor.



A.N.E Code: 1040

Mechanical thermostat (knob type)

Technical data

Voltage: 230V (AC 110V / AC 24V)

Boundary dimension: 86×86×53mm

Temperature control range: 5- 40 C°

Temperature control accuracy: ±1 C°

Maximum load current: 16A

Housing protection: IP20

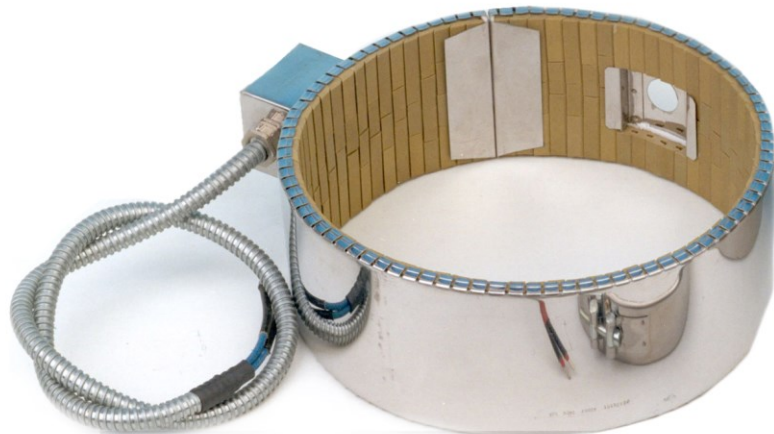
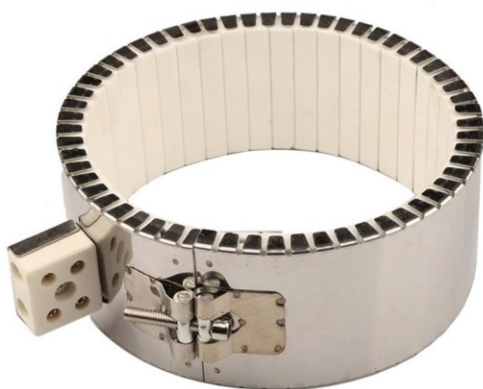
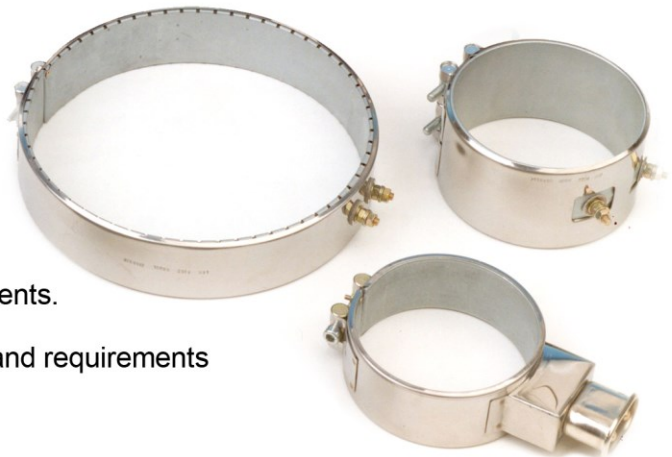


Clamp Belt element

A.N.E 1001-C

General characteristics

- Galvanized or stainless steel sheat.
- Heating element of Nickel-Chrome high quality material, wound around mica insulator adaptable to high temperatures (up to 500°C depending on constructions)
- Possibility of making entries for thermocouple, links or holes as per the client's needs
- Normal execution with screw closure or bolt flange with Allenscrew.
- Different types of electric connection: Screws - Plugged in - Flexible leads - Ceramic connector.
- Optional executions:
 - Articulated with hinge.
 - Double thermic insulation.
 - Air chamber.
 - With ceramic or mica support or shielded heating elements.
- Sizes, watts and volts as per technical characteristics and requirements
- Explosion proof enclosure type





FLEXIBLE SILICONE HEATING BANDS

A.N.E 1001-F

A.N.E 1001-F silicone flexible heating bands are thin, light, water and ozone proof and allow you to heat metal surfaces which could not heat easily.

- A.N.E 1001-F silicone heating bands stick to the drum, tanks or capsule enclosure of elastic springs located on the ends. Due to its flexibility, the heating band adapts to the surface of the drum, thus improving on the performance of conventional clamps because it avoids the creation of air bubbles and dust that act as thermal insulators.

General characteristics

- Temperature range: up to +180 °C in continuous use.
- Adjustable thermostat 20 °C to 180 °C protected by silicone.
- Silicone connection cable 2000 mm long.
- Material support: Rubber, silicone plus fiber glass with laminated metallic iron strap.
- Standard voltage ~230 V
- Other specification can be provided based on customer need



Infrared Heaters

A.N.E 1001-H

The ceramic heater is an efficient and powerful heater that provides long and medium wavelength infrared radiation. The ceramic heater is manufactured using a specialised process that requires the alloying of an electrically resistive wire, which is fused to the ceramic body.

Subsequently, the ceramic body is given a layer of enamel to protect it from humidity. Moreover, it protects the heater from corrosive and atmospheric attack. In this way ceramic heating elements optimise the characteristics of maximum absorption, operating at temperatures which range from 300°C to 750°C, with the emission of wavelengths ranging from 3 to 7 microns.

The ceramic heater has been designed so as to offer a very high efficiency (more than 85% in appropriately designed systems), flexibility of arrangement, interchangeability for maintenance, long life, and uniformity from heating element to heating element. The ceramic heating elements are the chosen heaters in the majority of elements



Pipe di-icing with thermostat

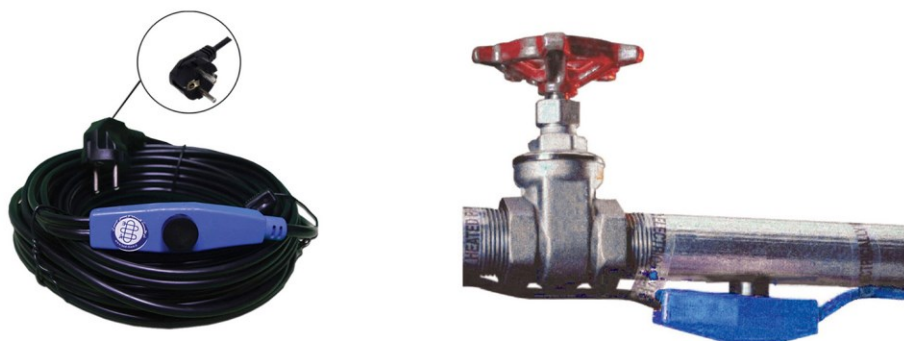
A.N.E 1110

2 years warranty

Heating cable with temperature sensor is composed of heating cable, a temperature switch a power cord and a power plug. easy to install, convenient and fast. It is household test tubes It is suitable for metal pipes and plastic pipes.

Product Picture

Easy to use



A.N.E CODE	Electric tropics length (m)	Cold line length (m)
A.N.E 1110	1	1.8
A.N.E 1111	2	1.8
A.N.E 1112	4	1.8
A.N.E 1113	8	1.8
A.N.E 1114	12	1.8
A.N.E 1115	14	1.8
A.N.E 1116	18	1.8
A.N.E 1117	24	1.8
A.N.E 1118	36	1.8
A.N.E 1119	48	1.8



A.N.E 1050 Ambient thermostat is ideal for domestic sector specially for measuring the temperature and humidity in order to implement an optimal heat tracing system for the walk ways, ramps, roofs, etc.

Temperature range	- 40 _ 80 C
Humadity range	0-100%
Dimension (mm)	250*350*150 - 300*400*170
Protection degree	IP65
Contactur	25A
Relay output	7A



Line sensing thermostat

A.N.E 1000

2 years warranty



A.N.E 1000, line sensing (pipe mounted) thermostat ideal for freeze protection and process temperature maintenance applications.

Temperature range	0 - 40 C, 30-90 C, 0-300 C
Capillary length	120 (cm)
Dimension (mm)	130*130*90
Protection degree	IP67
Bracket type	A.N.E 820.110, A.N.E 1313.20
Switching capability	220 V 10 A max, 110 V 16 A max

Stand-Off



A.N.E CODE	1027-330	1032-220	820-110
External diameter	27mm	32mm	20mm
Internal diameter	27mm	23mm	16mm
Height diameter	100mm	100mm	80mm
Material	Galvanized metal	Galvanized metal	Galvanized metal

Stand-Off



A.N.E CODE	1616-10	1313-10	147-10	136-28
Length diameter	160mm	130mm	140mm	130mm
Width diameter	160mm	130mm	70mm	60mm
Height diameter	100mm	100mm	100mm	280mm
Material	Galvanized metal	Galvanized metal	Carbon steel	Carbon steel



Ex-Capillary thermostat

A.N.E 1000Ex

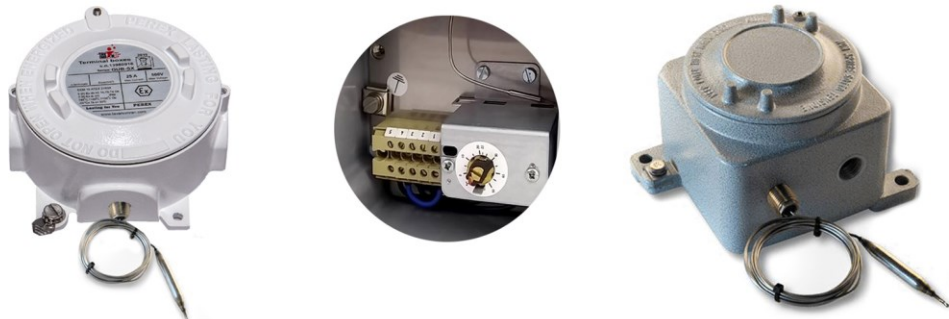
2 years warranty

The capillary thermostat **A.N.E 1000Ex** is approved for use in hazardous areas Zones 1 and 2 for gas and Zones 21 and 22 for dust as a surface thermostat on pipes and vessels.

There are different temperature ranges possible. The material of the capillary tube is stainless steel and the rugged enclosure is made of aluminium.

Applications:

Industrial applications, Use in hazardous areas, Heat tracing on pipes, valves and vessels, Oil & gas industry



Technical data

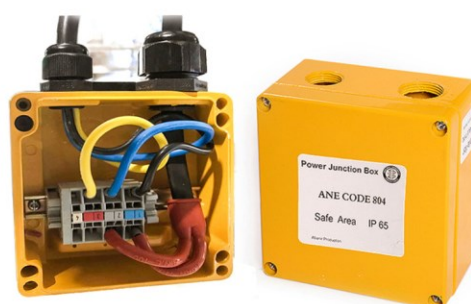
IP rating	IP 66
Ambient temperature	0 up to 40 °C [CT], 30 °C up to 90 °C [CT(2)], 0 °C up to 300 °C
Switching capacity	16 A at 230 V [CT] / 10 A at 400 V [CT(2) only]
Switching differential	1pol. [CT], 1 pol., changeover contact [CT(2)]
Switching contact	1pole
Capillary tube	Stainless steel
Length of capillary tube	1.5 m
Material enclosure	coated aluminium
Bending radius capillary tube	5 mm
Cable entrance	1 x gland M20, clamping range 10-14 mm 1 x thread M 20 x 1.5
Ex-Classification	II 2G Ex db IIC T6 Gb II 2D Ex tb IIIC T80°C Db Ta -32°C...+50°C [CT] Ta -50°C...+50°C [CT(2)](Important: Classification is subject to modification depending on the cable entrances used by the customer!)

GRP power connection box

A.N.E 804

2 years warranty

Part Number: A.N.E 804
Material: GRP
Dimensions: 110mmx110mmx60mm
Color: RAL 1003, Signal yellow
Entries: One standard M20 one M25



Power connector

A.N.E 804N

2 years warranty

Part Number: A.N.E 804N
Material: Polyamide
Dimensions: 140mm*30mm*30mm
Entries: One heat port & One power port



End seal box

A.N.E 805

2 years warranty

Part Number: A.N.E 805
Material: GRP
Dimensions: 110mmx110mmx60mm
Color: RAL 1003, Signal black
Entries: One standard M20 one M25





Silicone power seal

A.N.E 105

5 years warranty

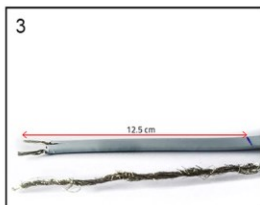
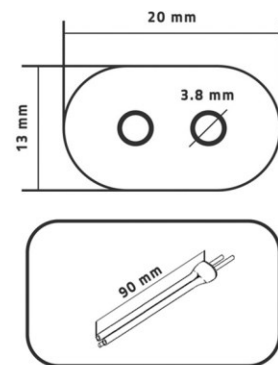


ANE 105 is designed to terminate the parallel heating cable.made from the best material with a special formula of silicone rubber by the experts of **ABAN HEAT TRACE GROUP** for use up to a temprature of 250 degrees Celsius.

made from halogen free materials and has a voltage insulation resistance of up to 2000 V and a thermal resistance of up to 800 degrees Celsius in short time conditions and temprature of 250 degrees and at constant working situation.

This product includes a **5 year warranty** from **ABAN HEAT TRACE GROUP**.

- Part number: A.N.E 105
- Materail: Special silicone rubber
- Dimensions: 90mm*20mm*13mm
- Weight: 5gr





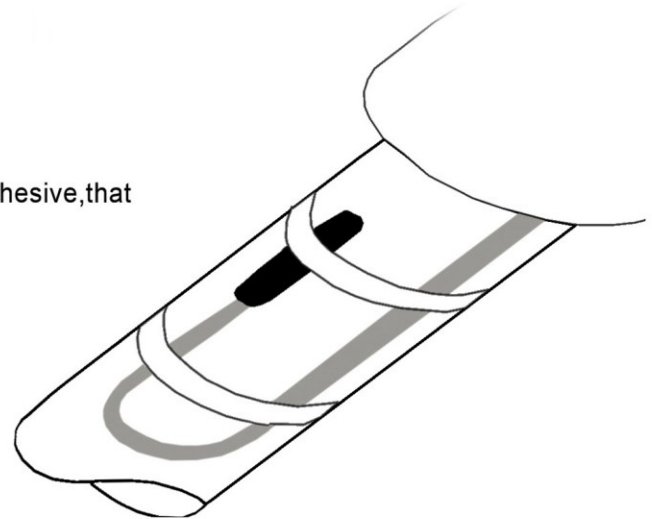
Resin type end seal

A.N.E 201 E-03

2 YEARS Warranty

A.N.E 201 E-03 is designed for all kind of electrical heating cables up to 205 Celsius degree.

The end kits employ easy to use heat shrinkable tubing with an adhesive, that when heated forms a semiflexible moisture proof encapsulation.



the termination can be installed directly on the pipe. One end seal kit is required for each termination.

A.N.E 201 E-03

Application

sealant for all type
of cable up to 205 C°

Kit contents

Heat shrinkable
Adheive coated sleeves
installation instruction





Low-profile end seal

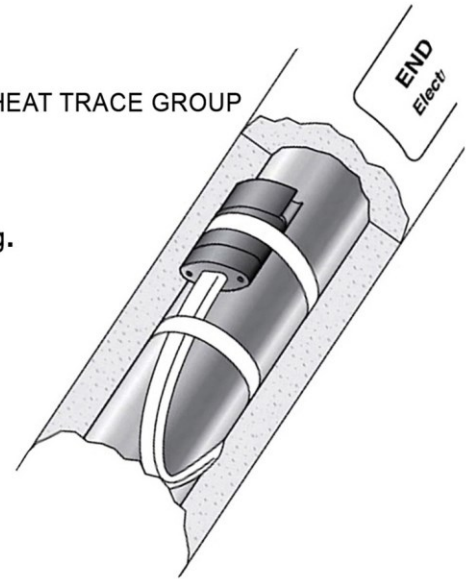
A.N.E 800,801

2 years warranty

Description

The ANE 800,801 are type end seal kit designed for use with all ABAN HEAT TRACE GROUP parallel type heating cables.

It is designed to be placed on the pipe under the insulation and cladding.



Tools required

- Screwdriver
- Utility knife
- Wire cutters

Additional materials required

fiberglass tape

ANE 23-10

ANE 23-20

Approvals



Hazardous Location

Suitable for heating cable type A.N.E 30, A.N.E 411, A.N.E412

Exe II C T 4, CE, ATEX

Simple and fast to install

Corrosion resistant

Reliable during long life: 2 years extended product warranty available, maintenance free



ANE 800



ANE 801

LED Indicator end seal

A.N.E 800 L

2 years warranty

A.N.E 800 L is a cold-applied high profile end seals for trace heating cables in both non-hazardous and hazardous locations.

Mounted on the pipe, through the thermal insulation and cladding, with LED light indicator available.



Low-profile splice & tee connection

A.N.E 802, 803

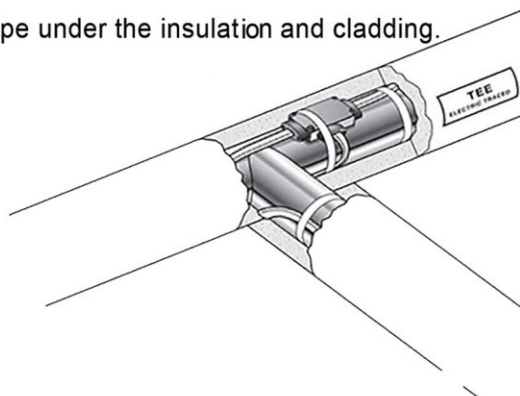
2 years warranty

Description

The **ANE 802,803** are splice and tee connection kit designed for use with all ABAN HEAT TRACE GROUP parallel type heating cables. it is designed to be placed on the pipe under the insulation and cladding.

Tools required

- Screwdriver
- Utility knife
- Wire cutters



Additional materials required

fiberglass tape

ANE 23-10

ANE 23-20



ANE 802

APPROVALS



Hazardous Location

Suitable for heating cable type A.N.E 30, A.N.E 411, A.N.E412

Exe II C T 4, CE, ATEX



ANE 803

Simple and fast to install

Corrosion resistant

Reliable during long life: 2 years extended product warranty available, maintenance free

Splice connection kit

A.N.E 803 N

2 years warranty

A.N.E 803 N is a cold-applied low profile splice for trace heating cables in both non-hazardous and hazardous locations.

Includes cold-applied heating cable core sealer.





Stainless steel cable nameplate holder

A.N.E 104

Part Number: A.N.E 104
 Material: Stainless steel 316
 Dimensions: 100mm * 80mm *20mm
 Weight: 25 gr
 Thickness: 0.3 mm



330 C High temperature RTV silicone sealant

A.N.E 24

RTV Silicone tape
 Hi-temp red silicone
Great for
 Oil pans
 Valve covers
 Water pumps
 Timing covers



Aluminium foil

A.N.E 50.30

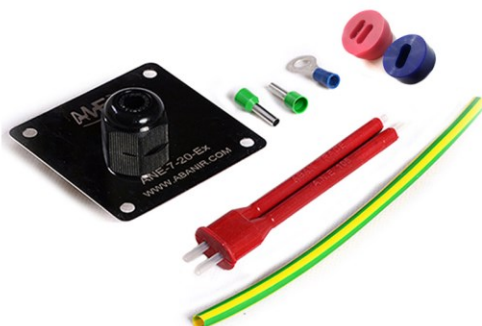
Temperature uniformity aluminium foil
 use immediately after installation



Accessories



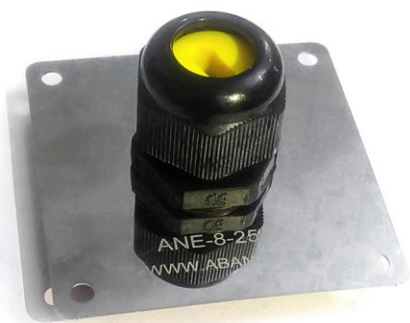
A.N.E 10



A.N.E 100
Termination kit



A.N.E 15
Pipe strap with lock



A.N.E 8-25 Ex



A.N.E 30



A.N.E 35



A.N.E 45



A.N.E 40



High temperature resistance tape

Warning Use with gloves

Part Number	Lenght	Width (mm)	Material
A.N.E 23-10	20 m	10mm	Fiberglass
A.N.E 23-20	20 m	20mm	Fiberglass



Aluminum tape

Aluminum tape suitable for protecting fixing and installation temperature. resistant from -40°C to $+140^{\circ}\text{C}$ high adhesive strength.

Aluminum tape is coated with a special adhesive layer on the aluminum foil tape. It is used for fixing heating cables & controlling divices on the pips and tanks.

Part Number	Lenght	Width (mm)	Material
A.N.E 21-48	23 m	48mm	Alu
A.N.E 21-50	45 m	50mm	Alu





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