FICHA TÉCNICA CABLE CALEFACTOR AUTORREGULANTE DE ALTO RENDIMIENTO RSR

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CABLE CALEFACTOR AUTORREGULANTE DE ALTO RENDIMIENTO RSR

DESCRIPCIÓN DEL PRODUCTO

Los cables calefactores autorregulables RSR ofrecen la mayor versatilidad en diseños y aplicaciones de trazado térmico.

Construidos con una matriz calefactora semicondutora extruida entre conductores paralelos, un cable autorregulable ajusta su potencia para responder de forma independiente a la temperatura ambiente a lo largo de toda su longitud.

A medida que la temperatura aumenta, la resistencia del calefactor también aumenta, lo que reduce la potencia de salida. Por el contrario, cuando la temperatura disminuye, la resistencia baja y el cable genera más calor.

Por ello, en algunas aplicaciones no es necesario un termostato. Nunca se sobrecalienta ni se quema, incluso si se superpone.

Además, el cable puede cortarse a cualquier longitud. Como resultado, obtenemos un cable calefactor energéticamente eficiente.

DATOS TÉCNICOS

Potencia de salida: 10, 17, 25, 31, 40 (W/m)
Temperatura máxima de mantenimiento: 65 °C
Temperatura máxima de exposición: 85 °C
Temperatura mínima de instalación: -60 °C
Tensión nominal: 110V-120V / 220V-240V

Certificaciones:

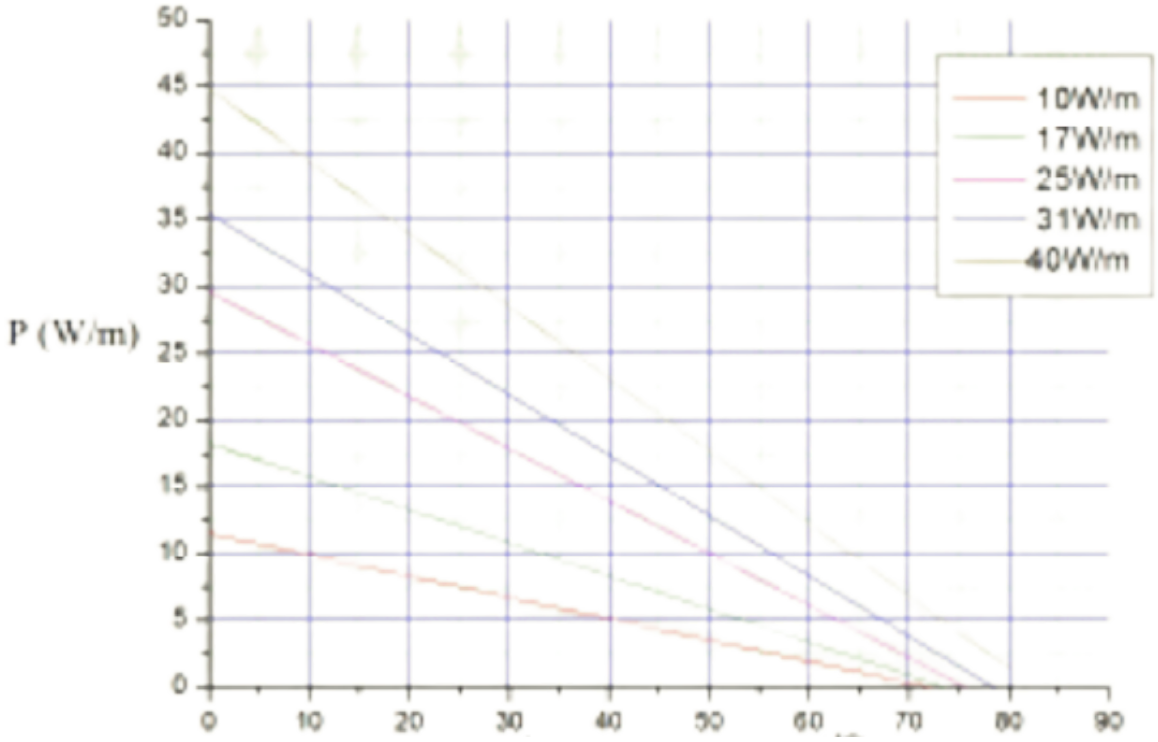
SERIE RSR

RSR-P: Malla metálica de cobre estañado
RSR-PB: Cubierta exterior termoplástica
RSR-PF: Cubierta exterior de fluoropolímero
Resistencia máxima de la malla: ≤18.2 Ω/km
Calibre del conductor principal (bus wire): 16 AWG

CABLE CALEFACTOR AUTORREGULANTE DE ALTO RENDIMIENTO RSR

DESCRIPCIÓN DEL PRODUCTO

Serie RSR



Temperatura de la Tubería (°C)

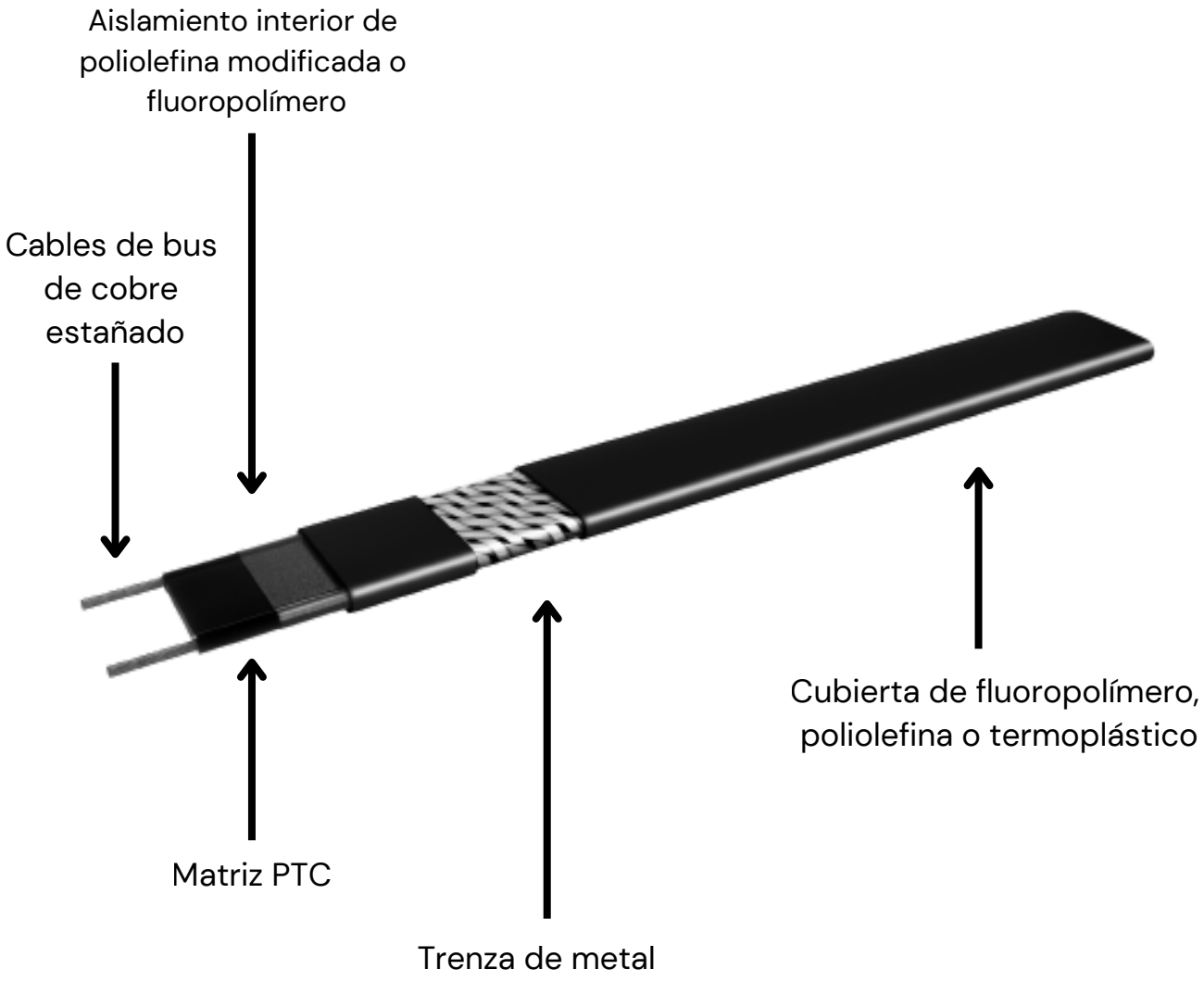
APLICACIONES

RSR se utiliza idealmente para el mantenimiento de la temperatura de procesos y la protección contra heladas en tuberías de diámetro regular, tanques, válvulas, bridas, techos y canaletas (deshielo), así como en otras aplicaciones donde se requiere baja temperatura.

Es adecuado para áreas no peligrosas, y el cable con cubierta exterior de fluoropolímero también puede utilizarse en áreas peligrosas y corrosivas.

CABLE CALEFACTOR AUTORREGULANTE DE ALTO RENDIMIENTO RSR

ESTRUCTURA DEL RSR



CABLE CALEFACTOR AUTORREGULANTE DE ALTO RENDIMIENTO RSR

RESUMEN TÉCNICO

Serie RSR	Potencia de salida @+10°C (W/m)	Temperatura máxima de mantenimiento (°C)	Longitud máxima @+10°C 16/30A (m)	Longitud máxima @+0°C 16/30A (m)	Longitud máxima @-20°C 16/30A (m)	Dimensión (mm)	Peso (kg/100m)
10RSR-PB	10	65	150/220	120/180	90/140	13.3×6.0	12.9
10RSR-PF	10	65	150/220	120/180	90/140	12.7×5.6	11.5
17RSR-PB	17	65	120/170	90/130	70/100	13.3×6.0	12.9
17RSR-PF	17	65	120/170	90/130	70/100	12.7×5.6	12.4
25RSR-PB	25	65	100/140	75/105	60/85	13.3×6.0	12.9
25RSR-PF	25	65	100/140	75/105	60/85	12.7×5.6	12.4
31RSR-PB	31	65	85/120	65/95	55/75	13.3×6.0	12.9
31RSR-PF	31	65	85/120	65/95	55/75	12.7×5.6	12.4
40RSR-PB	40	65	70/95	60/80	50/70	13.3×6.0	12.9
40RSR-PF	40	65	70/95	60/80	50/70	12.7×5.6	12.4

Las dimensiones del cable son solo de referencia.

TÜV AUSTRIA CERT GMBH
Certification Body

TÜV AUSTRIA

CERTIFICATE OF CONFORMITY

Certificate.- No.: TA 385213717

Product:	Self-regulating Heating Cable	Applicant:	Anhui Huanrui Heating Manufacturing Co., Ltd. Jingsan Road, Feidong Economic Development Zone, Hefei City, China
		Manufacturer:	Same as applicant

Type / Models / Trademark:	MSR Series; FSR Series; RSR Series; LSR Series; PSR Series; SSR Series; FRHT Series; LLSR Series; HSR Series; XBR Series; HWSR Series; MSR Kit Series; FSR Kit Series; RSR Kit Series
Description / Technical Specification:	Details as described in the test report.
EU Directive:	2014/35/EU
Standard(s) / Product - Certification Basis:	EN 62395-1:2013
Test Report:	TCF-200216
Comments:	N/A

According to the above stated test report(s) the specified product complies with the applicable requirements of the mentioned standard(s). The applicant may use the test report and this Certificate of Conformity in connection with his declaration of conformity referring the respective EU Directive(s) and Annex.

This Certificate of Conformity has been granted to the applicant based on the results of testing performed by the applicant/manufacturer or an approved laboratory and the consequent review of the test report by TÜV AUSTRIA CERT GMBH. Therefore, it does not imply any assessment of the instruction manual, product or the production process of this product by TÜV AUSTRIA. Revisions to the referenced certification basis or any change of the design, materials, components or processing may require the repetition of all or some of the qualification tests in order for the test report and therefore this associated certificate to remain valid. Furthermore the General Conditions for a Certificate of Conformity on a national or international Standard concerning a specified product are valid.

CE

2021-06-10
Date of Issue

TÜV AUSTRIA CERT GMBH TÜV AUSTRIA

Ivan Huang, Certification representative

CE Mark may only be affixed to this product after fulfillment of all applicable EU directives for this product and the preparation of the necessary technical documentation as well as the conformity declaration by the manufacturer.

The validity of this certificate (Max. 5 years from the date of issue) can be checked on the TÜV AUSTRIA's Homepage.
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QFM-TAC-CoCTASH-020, Rev.00

ZERTIFIKAT | CERTIFICATE | CERTIFICAT | CERTIFICADO | СЕРТИФИКАТ | شهادة | 证书 | 인증서

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Certificato di esame UE del tipo
EU-type examination certificate
ATEX n. ECM 22 ATEX-B DT25

Rilasciato ai sensi della Direttiva 2014/34/UE – Allegato III – Modulo B
Issued according to 2014/34/EU Directive– Annex III – Module B

Ragione Sociale *Company Name*	Anhui Huanrui Heating Manufacturing Co., Ltd.
Indirizzo *Address*	Jingsan Road, FeiDong Economic Development Zone, Hefei City, Anhui Province, China.
Prodotto *Product*	Self-regulating heating cable(T6)
Modello(i) *Model(s)*	MSR series, FSR series, LSR (DBR) series, RSR series, HWSR series
Modo di protezione *Protection mode*	Ex e IIC T6 Gb Ex t IIIC Db IP68

Questa apparecchiatura o sistema di protezione e le sue eventuali varianti accettate sono descritte nel presente Certificato.

This equipment or protective system and any acceptable variation thereto are described in this Certificate.

ECM 1282, facendo riferimento all'art. 9 della Direttiva 2014/34/UE ha eseguito una Verifica di Corrispondenza di questa apparecchiatura o sistema di protezione all'allegato III. Si ritiene che sono soddisfatti i requisiti essenziali di sicurezza e salute per il progetto e la costruzione di apparecchiature e sistemi di protezione destinati ad essere utilizzati in atmosfere potenzialmente esplosive, definiti nell'allegato II della Direttiva.

ECM 1282, with reference to the Article. 9 of Directive 2014/34/EU have carried out a Verification of Compliance of this equipment or protective system was tested according to Annex III. It is understood that the essential health and safety requirements are satisfied for the project and construction of equipment and protective systems intended to be used in potentially explosive atmospheres as given in Annex II of the Directive.

I requisiti essenziali di sicurezza e salute sono soddisfatti dalla rispondenza alle **Norme applicate:** EN IEC 60079-0:2018, EN IEC 60079-7:2015+A1:2018, EN 60079-31:2014.

The essential health and safety requirements are satisfied by the compliance to the applied **Standard**: EN IEC 60079-0:2018, EN IEC 60079-7:2015+A1:2018, EN 60079-31:2014.

Questo **Certificato di esame UE del tipo** è relativo soltanto al progetto, all'esame ed alle prove dell'apparecchiatura o sistema di protezione specificato in accordo con la Direttiva 2014/34/UE. Ulteriori requisiti di questa Direttiva si applicano al processo di produzione e fornitura dell'apparecchiatura o sistema di protezione. Questi requisiti non sono oggetto del presente certificato.

This **EU-type examination certificate** relates only to the design, examination and tests of the specified equipment in accordance with Directive 2014/34/EU. Further requirements of the Directive shall be applied to the manufacturing process and supply condition. These requirements are not covered by this certificate.

L'apparecchiatura o il sistema fa riferimento ai seguenti contrassegni:
The equipment shall refer to the following symbols:

II 2 GD
Ex e IIC T6 Gb
Ex t IIIC Db IP68

Valsamoggia (BO)
Data - *Date* 26/05/2022

Scadenza- *Expiry date* 25/05/2027

Firma autorizzata
Authorized signature

Amanda Payne
(Deputy Manager)

Test Report / Technical Construction File no. *TAAH22041138103*

Questo certificato, compreso l'allegato, può essere riprodotto solo integralmente e senza alcuna variazione.
This certificate, annex included, may only be reproduced in its entirety and without any change.

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Allegato I
Annex I
ATEX n. ECM 22 ATEX-B DT25

Rilasciato ai sensi della Direttiva 2014/34/UE – Allegato III – Modulo B
Issued according to 2014/34/EU Directive– Annex III – Module B

Product Description
MSR, FSR, LSR (DBR), RSR and HWSR are self-regulating heating cables designed for temperature maintainance, frost protection and de-icing, can be used in hazardous and non-hazardous areas, for commercial, resident and industrial applications. The maximum exposure temperature is 85°C. They are composed of two copper conductors, a PTC semi-conductive heater matrix, insulation, metallic braid, thermoplastic outer jacket or fluoropolymer outer jacket.
Rated voltage: 110-120V, 220-240V, 380-400Vac
Minimum installation temperature: -60°C

Type	Rated output W/m @10°C	Max exposure temp. °C	Ex marking	Ambient temp. °C
MSR series	10-40	85	II2GD ExeIICT6Gb ExtIIICDbIP68	-60°C - +85°C
FSR series	10-40	85		-60°C - +85°C
LSR series	10-40	85		-60°C - +85°C
RSR series	10-40	85		-60°C - +85°C
HWSR series	5-40	85		-60°C - +85°C

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Technical Construction File
IEC 60800:2021
Heating cables with a rated voltage up to and including 300/500 V for comfort heating and prevention of ice formation

Report reference No.	TLAH24022755130
Compiled by (+ signature)	Stephen Zhang / Test Engineer
Approved by (+ signature)	Kosco Vent / Project Manager
Date of issue	May 08, 2024
Reviewing laboratory	Shanghai Global Testing Services Co., Ltd.
Reviewing location	Floor 3rd, Building D-1, No. 128, Shenfu Road, Minhang District, Shanghai, China.
Applicant	Anhui Huanrui Heating Manufacturing Co.,Ltd
Address	Jingsan Road,FeiDong Economic Development Zone ,Hefei City,China
Manufacturer	Anhui Huanrui Heating Manufacturing Co., Ltd.
Address	Jingsan Road, Feidong Economic Development Zone, Hefei City, China
Factory	The same as Manufacturer
Address	The same as Manufacturer
Standard	☒ IEC 60800:2021
Review Report Form No.	60800
TRF originator	GTS
Master TRF	Reference IEC 60800:2021
Review procedure	GTS
Type of Review object	Constant wattage heating cable
Trademark	-
Model/type reference	HRSC, HRBHS, HRWT, HRTK-mat, HRSHTV, HRHC, HRVP, HRTP, T-mat, S-mat, F-mat, T-cable, S-cable, I-cable, HRDS/2R, RDC, RDP series
Rating	/

Possible review case verdicts: - review case does not apply to the test object..... : N(.A.) - review object does meet the requirement..... : P(ass) - review object does not meet the requirement.....: F(ail)
General remarks:
"(see remark #)" refers to a remark appended to the report. "(see appended table)" refers to a table appended to the report. Throughout this report a comma is used as the decimal separator. The review results presented in this report relate only to the object reviewed. This report shall not be reproduced except in full without the written approval of the third party.

Testing:	
Date of receipt of review item:	February 27, 2024
Date(s) of performance of review:	February 27, 2024 to May 08, 2024

General product information: Constant wattage heating cable
Summary of reviewing: This review report includes: Annex I: 7 page(s) of photo documentation.
Copy of marking plate

Constant wattage heating cable, Model T-cable Series Anhui Huanrui Heating Manufacturing Co., Ltd.	No marking

4	Mechanical classification		P
	The cables in this standard have been dividedinto two classes which indicate their ability to withstand mechanical forces during and after installation		---
	– mechanical class M1	M1	P
	– mechanical class M2:		N/A
	The class of any cable is determined by its performance as measured against the requirements in 8.2.7, 8.2.8 and 8.2.14.		P
5	Requirement for marking		P
	The product shall be marked by printing, embossing or indenting on the sheath or on a label attached to the product or on a component inside the cable		P
	A label shall be attached to the product in a permanent way and be clearly detectable to the electrical installer.	Pass muster	P
	The marking shall at least contain:		---
	identification of the manufacturer by name and or a symbol	Anhui Huanrui Heating Manufacturing Co., Ltd.	P
	the type reference	T-cable Series	P
	resistance per metre of cable at 20 °C in Ohms per metre if single or twin conductor series resistive cables, or for a parallel cable, power output in Watts per metre at a reference temperature. For series resistive cables with more than two conductors the resistance of each conductor shall be clearly marked	Pass muster	P
	mechanical classification		P
	the rated voltage for parallel Hanbaoge Heating Cables or maximum operating voltage for series Hanbaoge Heating Cables		P
	if applicable, “only for installation in concrete		N/A
	The distance between the end of one complete set of marks and the beginning of the next shall not exceed		---
	– 550 mm, if the marking is on the sheath		P
	– 275 mm, if the marking is on a component inside the cable		N/A
	If the units are factory assembled, the following additional information shall be provided:		---
	For series resistive units:		---
	– nominal voltage		N/A
	– total wattage		N/A
	– total resistance		N/A
	For parallel resistive units:		---
	– power output in Watts per metre at a reference temperature or total wattage		N/A

4	Mechanical classification		P
	The cables in this standard have been dividedinto two classes which indicate their ability to withstand mechanical forces during and after installation		---
	– mechanical class M1	M1	P
	– mechanical class M2:		N/A
	The class of any cable is determined by its performance as measured against the requirements in 8.2.7, 8.2.8 and 8.2.14.		P
5	Requirement for marking		P
	The product shall be marked by printing, embossing or indenting on the sheath or on a label attached to the product or on a component inside the cable		P
	A label shall be attached to the product in a permanent way and be clearly detectable to the electrical installer.	Pass muster	P
	The marking shall at least contain:		---
	identification of the manufacturer by name and or a symbol	Anhui Huanrui Heating Manufacturing Co., Ltd.	P
	the type reference	T-cable Series	P
	resistance per metre of cable at 20 °C in Ohms per metre if single or twin conductor series resistive cables, or for a parallel cable, power output in Watts per metre at a reference temperature. For series resistive cables with more than two conductors the resistance of each conductor shall be clearly marked	Pass muster	P
	mechanical classification		P
	the rated voltage for parallel Hanbaoge Heating Cables or maximum operating voltage for series Hanbaoge Heating Cables		P
	if applicable, “only for installation in concrete		N/A
	The distance between the end of one complete set of marks and the beginning of the next shall not exceed		---
	– 550 mm, if the marking is on the sheath		P
	– 275 mm, if the marking is on a component inside the cable		N/A
	If the units are factory assembled, the following additional information shall be provided:		---
	For series resistive units:		---
	– nominal voltage		N/A
	– total wattage		N/A
	– total resistance		N/A
	For parallel resistive units:		---
	– power output in Watts per metre at a reference temperature or total wattage		N/A

	Printed marking shall be durable		N/A
	Compliance with this requirement shall be checked by the test given in 8.2.21.		N/A
	The above are the minimum requirements and suppliers are free to add any additional information which may be useful.		P
6	Requirements for installation instructions		P
	The manufacturer shall provide product specific installation instructions for Hanbaoge Heating Cables, Hanbaoge Heating Cable sets and components		P
	The instructions shall be clearly identified as to the products and locations that apply, and shall include the following information:		---
	a) the intended use(s), either by general application type or by specific listed application		P
	b) a means of isolating all line conductors from the supply		P
	c) over-current protection provided		P
	d) the statement “Residual current device (RCD) protection is required		P
	e) for mechanical classification M1 Hanbaoge Heating Cables, intended for reduced levels of mechanical forces, the statement “Caution: Do not use in areas subject to high mechanical loads or impact”;		P
	f) an applicable statement to indicate that any metal sheath, braid, screen or equivalent electrically conductive covering of the Hanbaoge Heating Cable shall be connected to an earth terminal		P
	g) minimum installation temperature		P
	h) minimum bending radius		P
	i) the statement: “The presence of the Hanbaoge Heating Cable shall be made evident by the posting of caution signs or markings, such as in the fuse box, at appropriate locations, such as at the power connection fittings and/or at frequent intervals along the circuit and be part of any electrical documentation following the installation”;		P
	j) if applicable, the statement “The Hanbaoge Heating Cable shall only be installed in concrete”.		P
	The above are the minimum requirements and suppliers are free to add any additional information which may be useful.		P
7	General requirements for construction of cables		P
7.1	General		P
	The cables shall be designed and constructed so as to give electrical, thermal and mechanical durability, and so that, in normal use, their performance is without danger to the user or surroundings		P

	All integral components shall comply with this standard.	IEC 60800	P
	All integral components shall comply with this standard. All others shall comply with relevant product standards		P
	Compliance is checked by all the requirements and tests specified in this standard		P
	All parts of a Hanbaoge Heating Cable intended for use in contact with potable water shall be constructed of materials that meet relevant national or local requirements		P
7.2	Conductors		P
	Conductors shall consist of one or more wires of pure or alloyed metal		P
	In the case of conductors consisting of pure copper coated with a metallic coating, the metallic coating shall be appropriate to the conductor operating temperature.		P
	The resistance of the conductors at 20 °C 1 °C shall be in accordance with the values given by the manufacturer with a maximum tolerance of $^{+10}_{-6}$%.		P
	The heating conductor material used shall not have a negative temperature coefficient of resistance.		P
	Compliance shall be checked according to the test in 8.2.1	Pass muster	P
7.3	Insulation		P
	The insulating materials used in Hanbaoge Heating Cables shall be suitable for the intended use.		P
	This shall be verified by meeting the tests and the requirements given in this standard.		P
	The minimum average value of the insulation thickness shall be stated by the manufacturer, and measured according to IEC 60811-1-1, and meet the minimum requirement specified in 8.3.4.		P
7.4	Electrically conducting screen		P
	When applicable and required, Hanbaoge Heating Cables shall be provided with an evenly distributed electrically conductive metallic screen, or electrically conductive metallic sheath, tape or laminate or other suitable electrically conductive material		P
	The metallic screen or electrically conductive material shall enable protection device(s) to operate as intended.		P
	The resistance of the conductive sheath or screen, inclusive of a separate earthing conductor which shall be in contact with the sheath or screen, shall be not higher than the resistance of each conductor in the cable or higher than the resistance of a plain copper conductor having		P

	0,5 mm2 cross-sectional area as given for a class 1 conductor according to IEC 60228, whichever is the lesser. The combined resistance of any earthing conductor included with this screen or sheath shall not be greater than that of a 0,5 mm2 copper conductor		
	A number of copper wires may be included in order to comply with the requirements.		P
	Compliance shall be checked as described in 8.2.1		P
	If conductive sheath or screen alone is used as the earthing conductor, the resistance measured shall be the total resistance including the earthing connections delivered with the cable.		N/A
	Electrically conductive screens shall be so constructed as to prevent the penetration of foreign substances greater than 1 mm in diameter into the insulation without touching the screen.		N/A
	Compliance shall be checked by the test specified in 8.2.5.		P
7.5	Armouring		P
	Separate armouring, if any, may consist of metallic or non-metallic wires, sheath, tape or laminate. If metallic, it shall not be applied directly on to the metallic sheath if any, but shall be separated from this by a protective layer of suitable insulating material which can withstand the mechanical abuse and the temperatures which can occur under normal use, and protects the metallic sheath against corrosion.		P
	Electrically conductive armouring shall be so constructed as to prevent the penetration of foreign substances greater than 1 mm in diameter into the insulation without touching the armouring. Compliance shall be checked by the test as specified in 8.2.5		P
	If the armouring is based on a conductive material the same requirements as specified for the electrically conductive screen shall apply		N/A
7.6	Sheath		P
	The sheathing materials used in Hanbaoge Heating Cables shall be suitable for the intended use. This shall be verified by meeting the tests and the requirements given in this standard. A non-metallic outer sheath shall give mechanical and/or corrosion protection dependent on the type of cable		P
	The minimum average value of the sheath thickness shall be stated by the manufacturer and measured according to IEC 60811-1-1, and meet the minimum requirement specified in 8.3.5		P

	0,5 mm2 cross-sectional area as given for a class 1 conductor according to IEC 60228, whichever is the lesser. The combined resistance of any earthing conductor included with this screen or sheath shall not be greater than that of a 0,5 mm2 copper conductor		
	A number of copper wires may be included in order to comply with the requirements.		P
	Compliance shall be checked as described in 8.2.1		P
	If conductive sheath or screen alone is used as the earthing conductor, the resistance measured shall be the total resistance including the earthing connections delivered with the cable.		N/A
	Electrically conductive screens shall be so constructed as to prevent the penetration of foreign substances greater than 1 mm in diameter into the insulation without touching the screen.		N/A
	Compliance shall be checked by the test specified in 8.2.5.		P
7.5	Armouring		P
	Separate armouring, if any, may consist of metallic or non-metallic wires, sheath, tape or laminate. If metallic, it shall not be applied directly on to the metallic sheath if any, but shall be separated from this by a protective layer of suitable insulating material which can withstand the mechanical abuse and the temperatures which can occur under normal use, and protects the metallic sheath against corrosion.		P
	Electrically conductive armouring shall be so constructed as to prevent the penetration of foreign substances greater than 1 mm in diameter into the insulation without touching the armouring. Compliance shall be checked by the test as specified in 8.2.5		P
	If the armouring is based on a conductive material the same requirements as specified for the electrically conductive screen shall apply		N/A
7.6	Sheath		P
	The sheathing materials used in Hanbaoge Heating Cables shall be suitable for the intended use. This shall be verified by meeting the tests and the requirements given in this standard. A non-metallic outer sheath shall give mechanical and/or corrosion protection dependent on the type of cable		P
	The minimum average value of the sheath thickness shall be stated by the manufacturer and measured according to IEC 60811-1-1, and meet the minimum requirement specified in 8.3.5		P

7.7	Moisture resistance		P
	Hanbaoge Heating Cables shall comply with the requirements as stated in 8.2.2.		P
8	Testing		P
8.1	Type tests – General requirements		P
	For Hanbaoge Heating Cables intended to be supplied in bulk, a 5 m sample of the Hanbaoge Heating Cable shall be used for testing, if not otherwise specified		P
	For Hanbaoge Heating Cable sets which are factory assembled, including cold lead, splice and end seal, the complete Hanbaoge Heating Cable set shall be used for testing.		P
	Alternatively a 5 m sample of cable may be tested. The various parts such as cold lead, connection splice and end termination may be assembled on a dummy length of cable and tested separately		P
	For Hanbaoge Heating Cables intended to be field assembled, the connections and end terminations to be used and specified by the manufacturer shall be assembled, according to the manufacturer's instructions, with the Hanbaoge Heating Cable to form a Hanbaoge Heating Cable set. The complete Hanbaoge Heating Cable set shall be tested. Alternatively a 5 m sample of cable may be tested. The various parts such as cold lead, connection splice and end termination may be assembled on a 5 m dummy length of cable and tested separately, if not otherwise specified		P
	All sample components used shall be typical examples from what is supplied to the market or intended to be supplied to the market		P
	Tests shall be conducted at a room temperature between 20 °C and 25 °C, unless otherwise specified		P
	Unless otherwise specified, the test voltage shall be a.c. at a frequency between 49 Hz and 61 Hz of approximately sinusoidal waveform		P
	For a parallel resistive cable, the power output in Watts per metre shall be checked according to the test in 8.2.3		P
	For a parallel resistive cable, the start-up current shall be checked according to the test in 8.2.4		P
	Separate samples may be used for each test unless otherwise specified. These shall be prepared in accordance with the manufacturer's recommendations		P

	If a sample does not meet a specified requirement, two new complete sets of samples shall be tested. If both pass the test requirement, the cable shall be deemed to meet the test		N/A
8.2	Type tests – Detailed test requirements		P

8.2.1	Electrical resistance of heating conductors and screen		P
	The measurement at the higher temperature shall be compared with that at ambient temperature to confirm that the individual conductor(s) does not have a negative temperature coefficient of resistance		P
8.2.2	Water immersion and temperature cycling test		P
8.2.2.1	General remark		P
8.2.2.2	Dielectric test		P
8.2.2.3	Electrical insulation resistance test		P
8.2.3	Verification of rated output for parallel Hanbaoge Heating Cables		P
8.2.4	Verification of start-up current for parallel Hanbaoge Heating Cables		P
8.2.5	Penetration test for electrical conductive screen		P
8.2.6	Flammability test		P
8.2.7	Deformation test for installation classification		P
8.2.7.1	General remark		P
8.2.7.2	Class M1: cables intended for installation with low risk of mechanical damage		P
8.2.7.3	Class M2: cables intended for installation with higher risk of mechanical damage		P
8.2.8	Cold impact test		P
8.2.9	Cold bend test		P
8.2.10	Ageing test for insulation		P
8.2.11	Ageing test for non-metallic sheath		P
8.2.12	Compatability test		P
8.2.13	UV resistance test		P
8.2.14	Tensile test		P
8.2.15	Reverse winding test		P
8.2.16	Heat shock test		P
8.2.17	Shrinkage test for insulation and sheath		P
8.2.18	Hot set test		P
8.2.19	Cyclic ageing test for the Hanbaoge Heating Cable		P
8.2.20	Cyclic ageing test for splices and end seals		P
8.2.21	Checking of the durability of markings		P

8.2.22	Abrasion test		P
8.2.23	Deformation test for insulation and sheathing materials		P
8.3	Routine and sample tests		P

8.3.1	General remark		P
	The high voltage test and resistance test are routine tests while the other tests are sample tests.		P
	Every Hanbaoge Heating Cable set shall be tested for high voltage and unit resistance as routine tests		P
8.3.2	Voltage test		P
	Each supplied length or item, whether in bulk or individually produced Hanbaoge Heating Cable set, shall be subjected to a dielectric test		P
	The voltage test shall be performed between conductors and between conductors and screen, as applicable		P
	For Hanbaoge Heating Cable sets <300 m in length, the test shall be carried out at 2,5 kV a.c. for at least 5 s.		P
	For long bulk Hanbaoge Heating Cables, the test shall be carried out at 2,5 kV a.c. for 1 min or at 3,5 kV d.c. for 1 min		P
	No breakdown shall occur	No breakdown	P
8.3.3	Hanbaoge Heating Cable resistance and output verification		P
	The output rating for each shipped length of electric Hanbaoge Heating Cable shall be verified by measurement of the d.c. resistance or current at a given voltage and temperature		P
	For d.c. resistance and conductance, the resistance of the heating element per metre of conductor length at 20 °C ± 1 °C shall be in accordance with the values given by the manufacturer with a maximum tolerance of %, unless otherwise specified.		P
	The value of current at a given voltage and temperature shall be within the manufacturer's tolerance		P
8.3.4	Insulation thickness		P
	The minimum average value of the insulation thickness shall be stated by the manufacturer.		P
	The measurement of insulation shall be measured according to the method described in IEC 60811-1-1		P
	The thickness at any place shall not be less than the minimum average value minus 15 %.		P
8.3.5	Sheath thickness		P

	The minimum average value of the sheath thickness shall be stated by the manufacturer.		P
	The measurement of sheath shall be measured according to the method described in IEC 60811-1-1.		P
	The thickness at any place shall not be less than the minimum average value minus 20 %.		P
8.3.6	Hot set test		P

	Cross-linked insulation and sheathing materials shall be checked for cross-linking degree by the test method described in IEC 60811-2-1 at a temperature of 200 °C.		P
	The maximum allowable elongation under load is 175 % and maximum permanent elongation after cooling is 15 %.		P

- End of Review Report -

Type of equipment, model: Constant wattage heating cable,
HRSC, HRBHS, HRWT, HRTK-mat, HRSHTV, HRHC, HRVP, HRTP,
T-mat, S-mat, F-mat, T-cable, S-cable, I-cable, HRDS/2R, RDC, RDP series

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FEATURES

*With temperature and humidity controller, intelligently controlled, energy-saving.
*It can effectively prevent damage caused by snow on the roof, keep the gutter and downpipe clear, and prevent damage caused by ice.
*Pre-assembled and easy to install and use.
*Pre-assembled with a power plug ready for use

Certifications:



TECHNICAL DATA

Applicable areas	Europe, North America
Applications	Residential roof snow melting
Rated voltage	230V
Power output	30W/m
Min. installation temperature	0°C
Min. bending radius	6D

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INTRODUCTION

HRSC5.5-cable underfloor heating cable is designed for new buildings applications or any other circumstances where screed is going to be laid. HRSC5.5-cable is a twin conductor heating cable for easy installation with zero EMF.
HRSC5.5-cable underfloor heating cable used for in screed heating for new buildings and suitable for use for all kind of rooms and all kinds of coverings.
This system is usually installed on top of a layer of insulation beneath a 50-70mm screed and the output can be varied when being installed to accommodate your specific circumstance.



FEATURES

*Twin conductor heating cable
*100% screened
*One cold lead 2.5 meter
*Zero EMF
*DIY installation

Certifications:

EAC logo

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TECHNICAL DATA

Applicable areas	Europe
Applications	Road snow melting or tank antifreeze
Rated voltage	230V
Power output	20W/m
Total power consumption	1000W
Size	3m*1m

Certifications:

CE EAC logo





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TECHNICAL DATA

Applicable areas	Europe
Applications	Residential underfloor heating
Rated voltage	230V (Europe)
Power output	12W/m
Min. installation temperature	5°C
Min. bending radius	6D

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EAC logo CE



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TECHNICAL DATA

Rated voltage	110V-120V, 220V-380V, 660V, 1100V
Insulation resistance	≥750MΩ/Km
Dielectric strength	~~2~~ nominal voltage + 2500V
Max. withstand temperature	J3 - 205°C, J4 - 250°C
Min. installation temperature	- 40°C
Outer dimensions	5.9*12.5mm

Certifications:



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TECHNICAL DATA

Rated voltage	220V
Insulation resistance	≥20M Ohm
Max. exposure temperature	205°C
Protection Class	IP54
Dielectric strength	2000V 50Hz/1min
Insulation material	FEP
Outer dimensions	6.3*9.5mm

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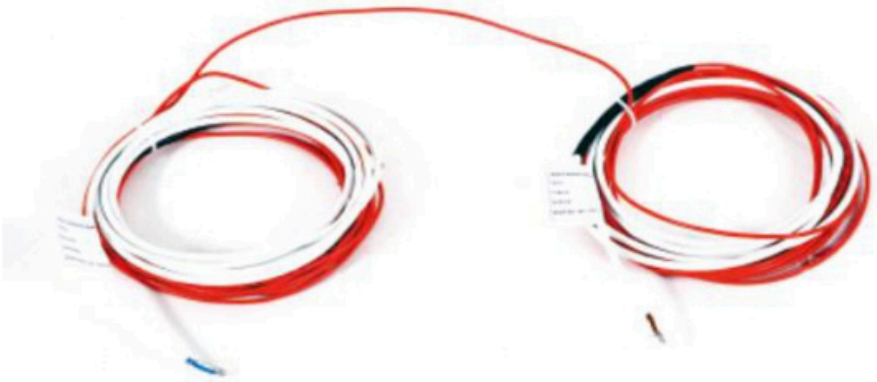
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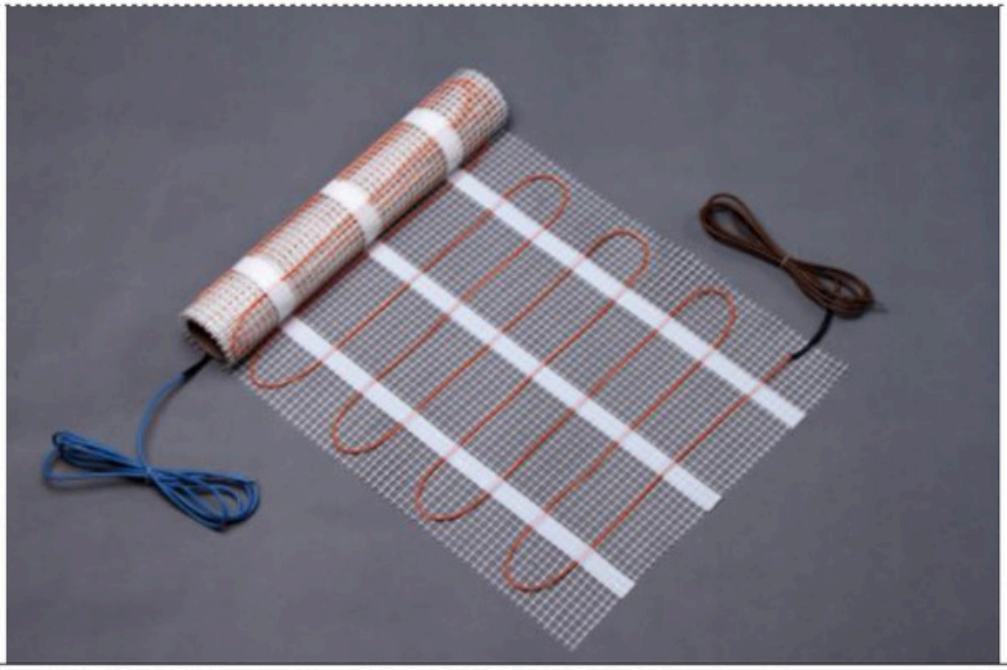
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- End of Annex I -

Control Nautas

NUESTRA CARTA DE DISTRIBUCIÓN

Anhui Huanrui Heating Manufacturing Co., Ltd.

HEFEI HIF HEATING INDUSTRIES CO., LTD

Office: +86-551-67709531 Mobile:+86-551-156 5602 7387

Email: wang@heatcablemat.com hif5@hiftrace.com

Carta de Autorización

A quien corresponda:

Este documento confirma que **Control Nautas SAC** es nuestro distribuidor autorizado para todo el territorio peruano y está autorizado para vender nuestros productos, incluidos los productos de **cable calefactor** (cable calefactor autorregulador y de potencia constante, accesorios). Además, ellos son nuestro recurso técnico y de servicio postventa para esa región.

La autorización es válida desde el 10 de septiembre de 2024 hasta el 9 de septiembre de 2025.

Atentamente,

Sr. Congwei Wang
Gerente de ventas para exportación
Anhui Huanrui Heating Manufacturing Co. Ltd
7 de septiembre de 2024

安徽环瑞电热器材有限公司
ANHUI HUANRUI HEATING MANUFACTURING CO.,LTD
计成志