ISOHEAT®

Qualität
Made in Germany

High Tech Engineering

Mineral-insulated heating cables

Electric heating systems for industry and research



ISOHEAT®

www.isoheat.de

The brand name for customized electric heating technology

Electric heating systems with mineral-insulated heating cables

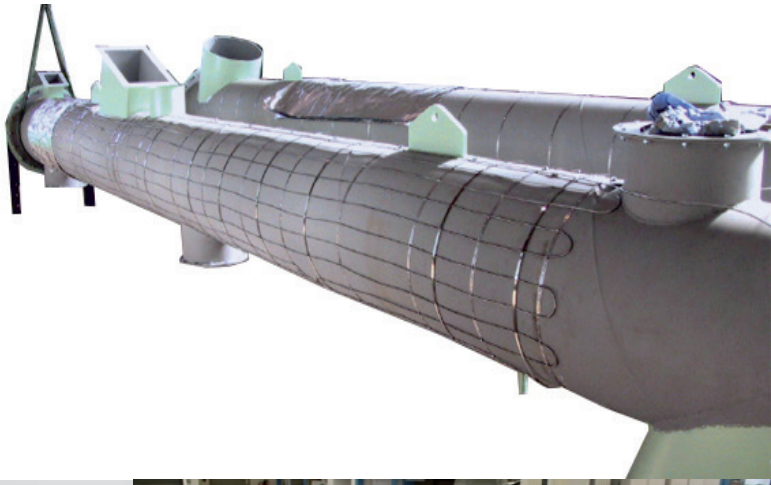


Heating cable temperature up to 1000°C

Also available in Ex-proof design in accordance with ATEX/IECEx guidelines. Ready-made heating cables for installation on tanks, pipes, valves, equipment, and much more. Thanks to its waterproof stainless steel outer sleeve, the heating cable is also suitable for use in harsh, corrosive environments.

Areas of application:

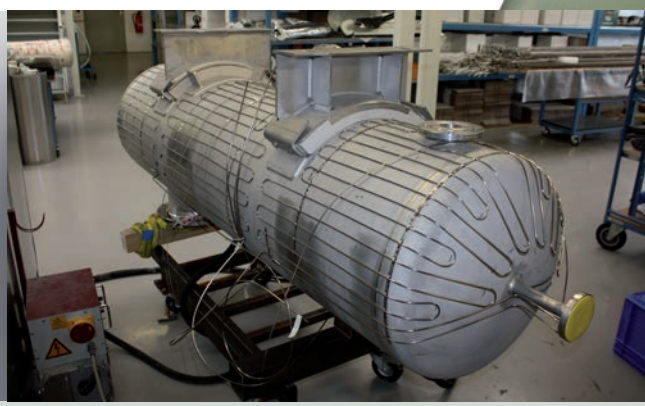
Chemical industry
Petrochemical industry
Mechanical engineering
Research
etc.



Application examples:

Bunker tip heating
Tank heating
Valve heating
Pump heating
Process heating
Pipe trace heating







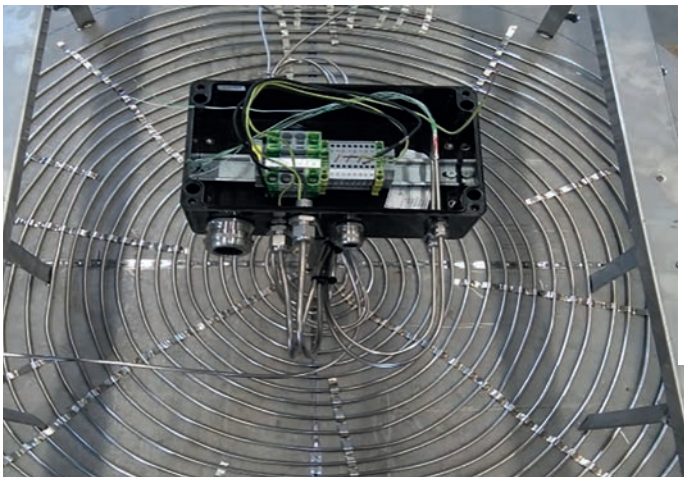


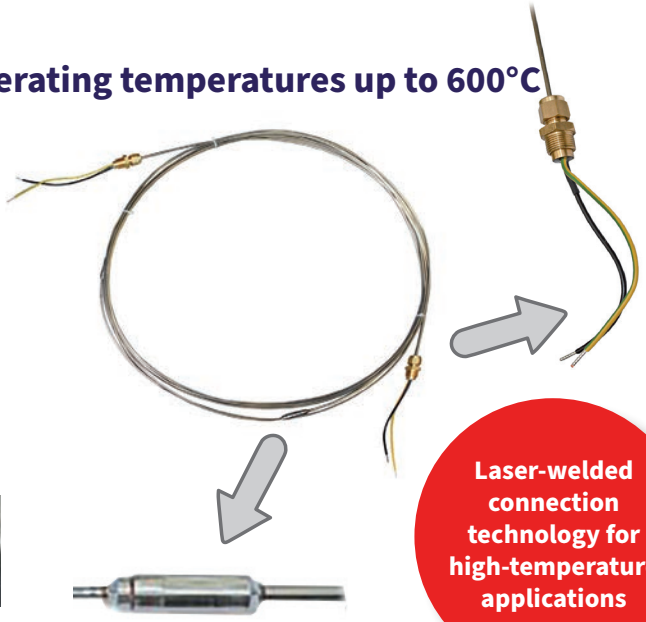




MIL-HC-SS/CN

MMineral-insulated heating cables for operating temperatures up to 600°C





Laser-welded connection technology for high-temperature applications

Technical Data:	
Outer sleeve	Stainless steel 1.4828
Insulating layer	Magnesium oxide
Inner conductor (resistance wire)	Copper-nickel alloy
Rated voltage	Up to 500 V AC
Bending radius	5x outer diameter
Nominal power max.	up to 150 W/m depending on operating conditions
Diameter	Ø3,2 – 4,9 mm
Protection class	I
Protection type	IP 67 (waterproof)
Max. heating conductor temperature	600°C
Cold ends	2 x 0.5 m (standard, other lengths available)
Screw connection	M20 x 1.5 brass

Resistance values	Outer diameter	Bending radius
0,16 Ω/m	4,9 mm	>25 mm
0,25 Ω/m	4,5 mm	>23 mm
0,40 Ω/m	3,9 mm	>20 mm
0,63 Ω/m	3,6 mm	>18 mm
1,00 Ω/m	3,4 mm	>17 mm
1,60 Ω/m	3,2 mm	>16 mm

Note: The heating output per meter of heating cable and the maximum possible temperatures depend on the specific application.
Important parameters must also be taken into account when controlling and regulating the heating cables. Please contact our engineers if necessary. We will be happy to advise you.

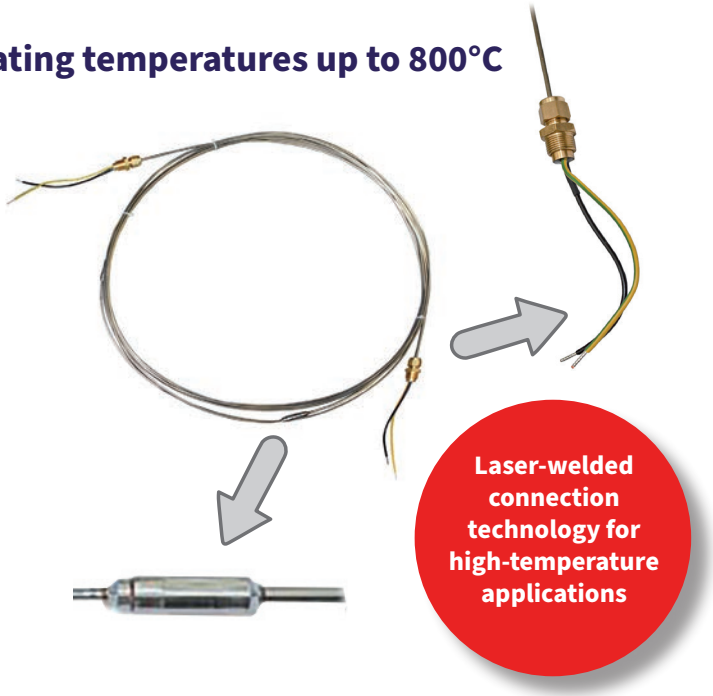
Corrosion resistance

Good corrosion resistance is provided under natural environmental conditions. However, the salt and chlorine content should be low. Material 1.4541 is resistant to intergranular corrosion, but not to seawater. Its excellent heat resistance and good cold formability are among its advantages.

MIL-HC-SS

Mineral-insulated heating cables for operating temperatures up to 800°C





Laser-welded connection technology for high-temperature applications

Technical Data:	
Outer sleeve	Stainless steel 1.4828
Insulating layer	Magnesium oxide
Inner conductor (resistance wire)	Nickel-chromium alloy
Rated voltage	Up to 500 V AC
Bending radius	5x outer diameter
Nominal power max.	up to 250 W/m depending on operating conditions
Diameter	Ø3,2 – 6,5 mm
Protection class	I
Protection type	IP 67 (waterproof)
Max. heating conductor temperature	800°C
Cold ends	2 x 0.5 m (standard, other lengths available)
Screw connection	M20 x 1.5 brass

Note: The heating output per meter of heating cable and the maximum possible temperature depend on the specific application. Important parameters must also be taken into account when controlling and regulating the heating cables. Please contact our engineers if necessary. We will be happy to advise you.

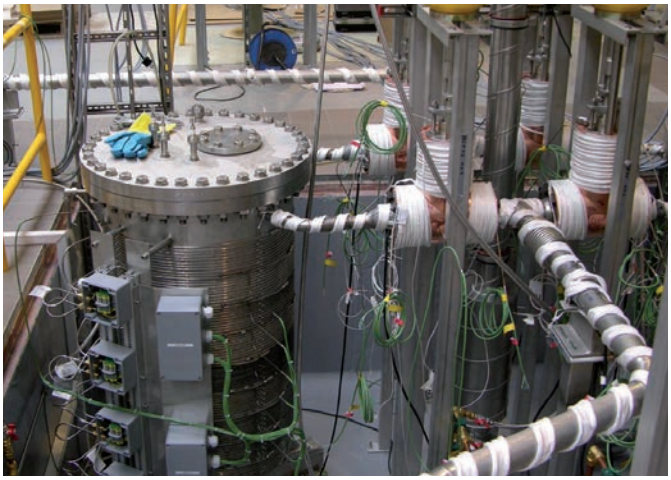
Corrosion resistance

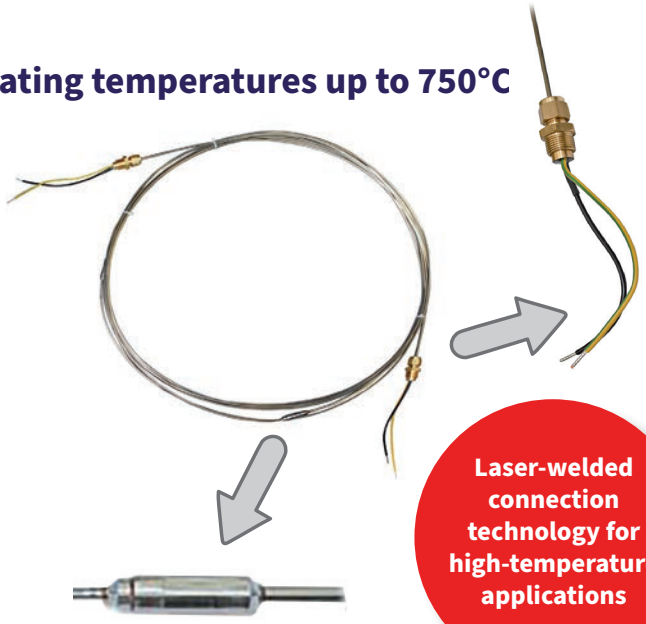
Good corrosion resistance is provided under natural environmental conditions. However, the salt and chlorine content should be low. Material 1.4541 is resistant to intergranular corrosion, but not to seawater.
Its excellent heat resistance and good cold formability are among its advantages.

Resistance values	Outer diameter	Bending radius
0,16 Ω/m	6,5 mm	>32 mm
0,25 Ω/m	5,6 mm	>28 mm
0,40 Ω/m	5,0 mm	>25 mm
0,63 Ω/m	4,5 mm	>22 mm
1,00 Ω/m	4,1 mm	>20 mm
1,60 Ω/m	3,8 mm	>19 mm
2,50 Ω/m	3,6 mm	>18 mm
4,00 Ω/m	3,2 mm	>16 mm
6,30 Ω/m	3,2 mm	>16 mm
10,0 Ω/m	3,2 mm	>16 mm

MIL-HC-Alloy 825

Mineral-insulated heating cables for operating temperatures up to 750°C





Laser-welded connection technology for high-temperature applications

Technical Data:	
Outer sleeve	Alloy 825 (2.4858)
Insulating layer	Magnesium oxide
Inner conductor (resistance wire)	Nickel-chromium alloy
Rated voltage	Up to 500 V AC
Bending radius	5x outer diameter
Nominal power max.	up to 250 W/m depending on operating conditions
Diameter	Ø3,2 – 6,5 mm
Protection class	I
Protection type	IP 67 (waterproof)
Max. heating conductor temperature	750°C
Cold ends	2 x 0.5 m (standard, other lengths available)
Screw connection	M20 x 1.5 brass



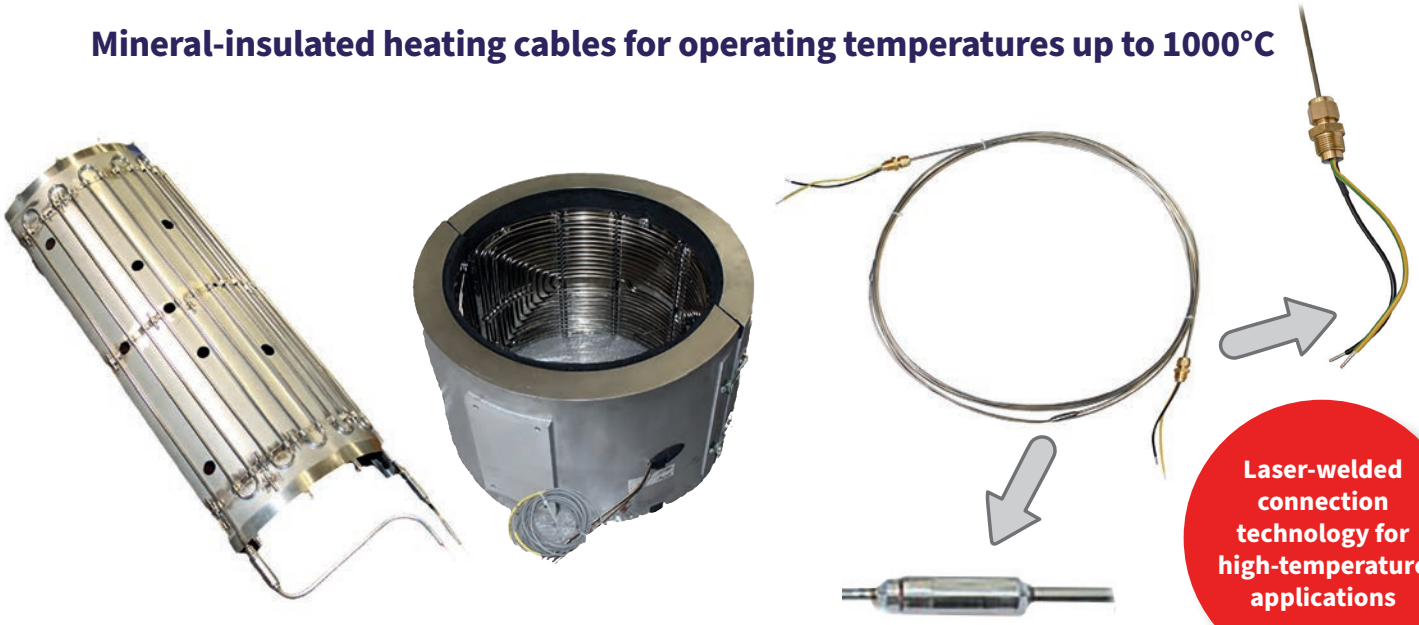
Corrosion resistance

Due to its high nickel content, Alloy 825 (2.4858) is practically immune to stress corrosion cracking. It is resistant to chloride-induced pitting and crevice corrosion. Alloy 825 also has good resistance to mineral acids (nitric, phosphoric, sulfuric, and hydrochloric acid), organic acids, alkalis, ammonia, and chloride alkalis. This material is resistant to seawater.

Resistance values	Outer diameter	Bending radius
0,16 Ω/m	6,5 mm	>32 mm
0,25 Ω/m	5,6 mm	>28 mm
0,40 Ω/m	5,0 mm	>25 mm
0,63 Ω/m	4,5 mm	>22 mm
1,00 Ω/m	4,1 mm	>20 mm
1,60 Ω/m	3,8 mm	>19 mm
2,50 Ω/m	3,6 mm	>18 mm
4,00 Ω/m	3,2 mm	>16 mm
6,30 Ω/m	3,2 mm	>16 mm
10,0 Ω/m	3,2 mm	>16 mm

MIL-HC-INC

Mineral-insulated heating cables for operating temperatures up to 1000°C



Laser-welded connection technology for high-temperature applications

Technical Data:	
Outer sleeve	Inconel 600 (2.4816)
Insulating layer	Magnesium oxide
Inner conductor (resistance wire)	Nickel-chromium alloy
Rated voltage	Up to 500 V AC
Bending radius	5x outer diameter
Nominal power max.	up to 280 W/m depending on operating conditions
Diameter	Ø3,2 – 6,5 mm
Protection class	I
Protection type	IP 67 (waterproof)
Max. heating conductor temperature	1000°C
Cold ends	2 x 0.5 m (standard, other lengths available)
Screw connection	M20 x 1.5 brass

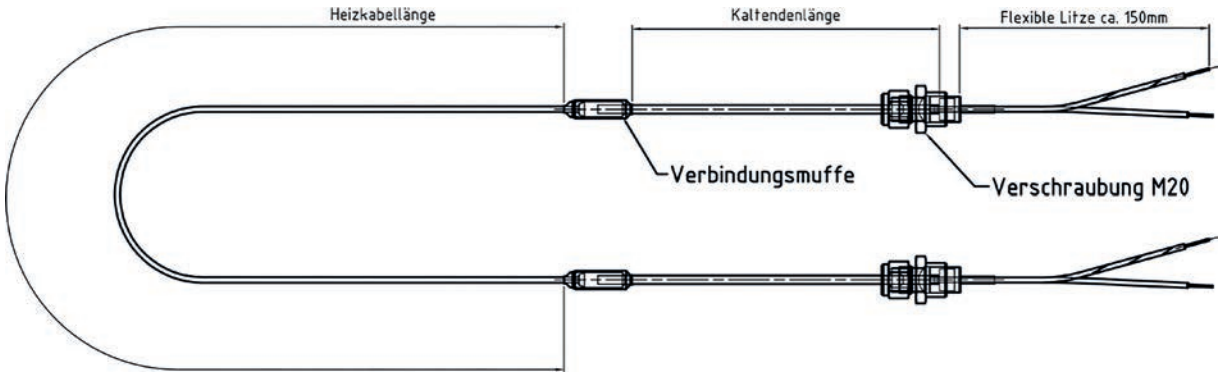
Note: The heating output per meter of heating cable and the maximum possible temperatures depend on the specific application. Important parameters must also be taken into account when controlling and regulating the heating cables. Please contact our engineers if necessary. We will be happy to advise you.

Corrosion resistance

Inconel 600 (2.4816) is resistant to a wide range of corrosive media. Its high nickel content gives it good resistance in alkaline solutions and under reducing conditions. The chromium content also makes this material suitable for use in oxidizing conditions. Inconel 600 has good resistance to acetic, formic, and fatty acids, as well as caustic soda. Inconel 600 exhibits good scale resistance at high temperatures while maintaining high strength.

Resistance values	Outer diameter	Bending radius
0,16 Ω/m	6,5 mm	>32 mm
0,25 Ω/m	5,6 mm	>28 mm
0,40 Ω/m	5,0 mm	>25 mm
0,63 Ω/m	4,5 mm	>22 mm
1,00 Ω/m	4,1 mm	>20 mm
1,60 Ω/m	3,8 mm	>19 mm
2,50 Ω/m	3,6 mm	>18 mm
4,00 Ω/m	3,2 mm	>16 mm
6,30 Ω/m	3,2 mm	>16 mm
10,0 Ω/m	3,2 mm	>16 mm

Ready-made stock items



MIL-HC-SS/CN

heated length	length cold part	voltage	power	part-no.
m	m	V	W	MIL-HC-SS/CN
25,7	0,5	230	1285	24000257
32	0,5	230	1650	24000320
41	0,5	230	2050	24000410
51	0,5	230	2595	24000510
65	0,5	230	3255	24000650
81	0,5	230	4080	24000810

MIL-HC-SS/MIL-HC-INC/MIL-HC-Alloy 825

heated length	length cold part	voltage	power	part-no.	part-no.	part-no.
m	m	V	W	MIL-HC-SS	MIL-HC-INC	MIL-HC-Alloy 825
5,1	0,5	230	1037	25100051	26100051	26300051
6,5	0,5	230	1292	25100065	26100065	26300065
7,7	0,5	230	1718	25100077	26100077	26300077
10,3	0,5	230	2054	25100103	26100103	26300103
12,7	0,5	230	2603	25100127	26100127	26300127
15,5	0,5	230	3413	25100155	26100155	26300155

Also available in Ex-proof design according to ATEX guidelines

Mounting accessories for mineral-insulated heating systems

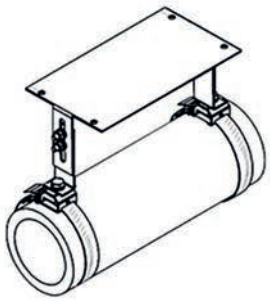
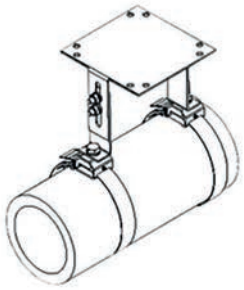
Connection boxes






Type	Material	Heating circuits	Dimension	part-no.
MIL-ACB 0	Aluminium	1	125 x 80 x 65mm	70000000
MIL-PCB 1	Polyester	2	120 x 122 x 90mm	70000201
MIL-PCB 2	Polyester	3	160 x 160 x 90mm	70000202
MIL-ACB 2	Aluminium	3	220 x 122 x 90mm	70000090

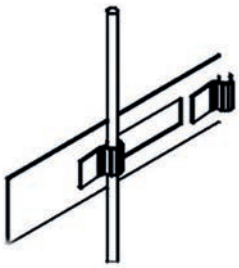
Mounting brackets

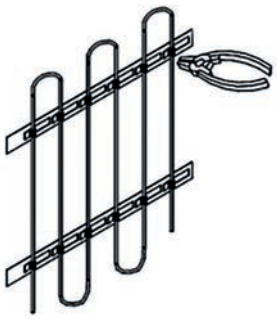

Type	Material	Dimension plate	part-no.
MIL-MS 1	stainless steel (AISI 304)	125 x 80 mm	72000010
MIL-MS 2	stainless steel (AISI 304)	120 x 122 mm	72000011
MIL-MS 3	stainless steel (AISI 304)	160 x 160 mm	72000012

Mounting accessories for mineral-insulated heating systems

Spacer mounting tape sold by meter



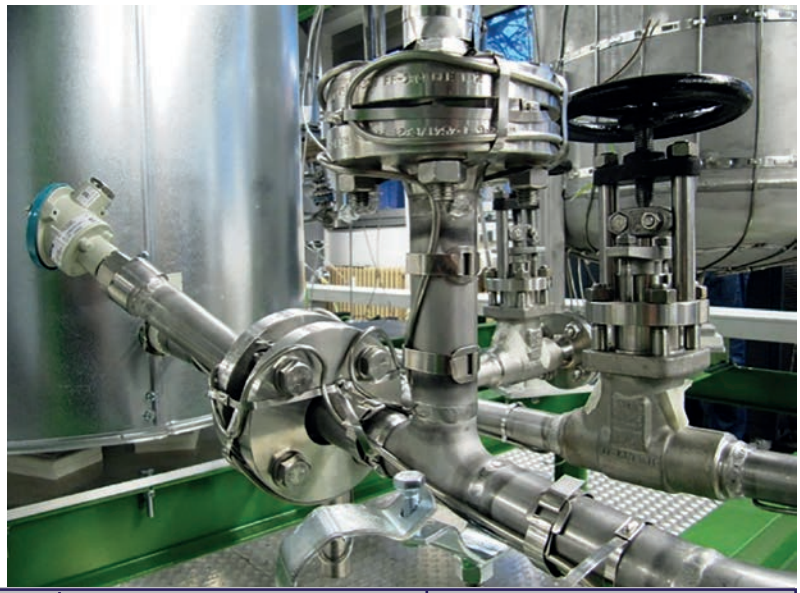




Type	Material	spacing (mm)	part-no.
MIL-DMF 30	stainless steel (AISI 304)	30	71000201
MIL-DMF 40	stainless steel (AISI 304)	40	71000202
MIL-DMF 50	stainless steel (AISI 304)	50	71000203

Metal strapping



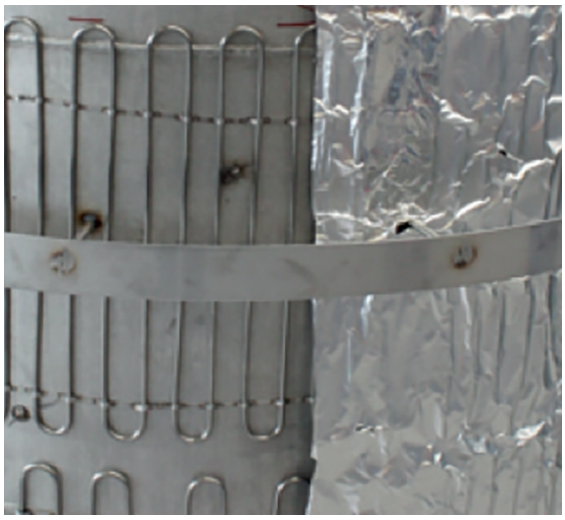


Type	Material	Description	part-no.
MIL-MFT	stainless steel (AISI 304)	Band 10 x 0,4 mm	71000210
MIL-CL 1	stainless steel (AISI 304)	tension lock	71000301

Mounting accessories for mineral-insulated heating systems

Covering film between heating cable and insulation

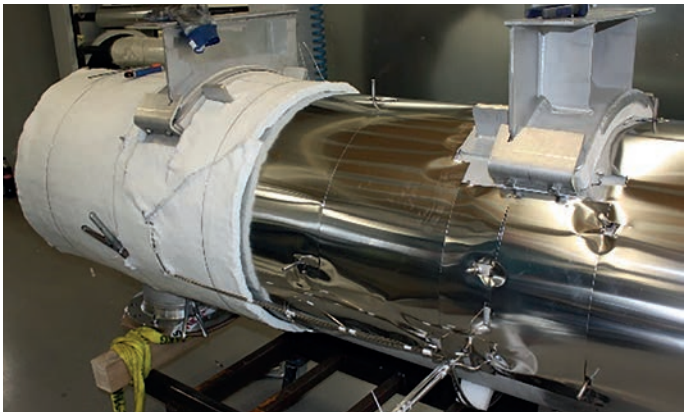




Type	Material	Description	Temperature	Dimension	part-no.
MIL-AF	Aluminium	Aluminium-foil	up to 400°C	per meter 1000 mm wide	71000401
MIL-SSF	stainless steel	stainless steel-foil	up to 800°C	per meter 610 mm wide	71000410
MIL-AFT150	Aluminium	Aluminium adhesive tape	150°C glue	role 50m	71000105
MIL-GFT 15	Glasseide	glass silk adhesive tape	180°C glue	role 30m	71000151

Insulation material sold by meter





Type	Material	Description	Temperature	Dimension	part-no.
MIL-GM25	Glass Needle	Glass-Needle mat 25mm	up to 450°C	per meter 1000 mm wide	71000401
MIL-QM25	Quarz-Glass	Quarz-Insulation mat 25 mm	up to 1200°C	per meter 610 mm wide	71000410

Mounting accessories for mineral-insulated heating systems

Temperature sensor





Type	Material	Description	Temperature	Dimension	part-no.
MIL-TP2	stainless steel	Pt100 element	up to 400°C	Ø4 x 50mm + 2m Anschluss	62000120
MIL-TNS	Inconel	Thermocouple NiCr-Ni	up to 1200°C	Ø1,5 x 300mm + 5m Anschluss	62000200

Other versions and dimensions available on request

Control devices









Type	Connection	Description	Input	Dimension	part-no.
MIL-EC 510	Clamps	Electronic controller	230V / 16A	151 x 125 x 60mm (LxBxH)	61000510
MIL-RD 1011	Clamps	Electronic controller	230V / 16A	165 x 160 x 135mm (LxBxH)	61001011
MIL-RD 2011	Clamps	Electronic double controller	230V / 16A	265 x 240 x 147mm (LxBxH)	61002011
MIL-RD 3011	Clamps	Electronic controller an limitler	230V / 16A	265 x 240 x 147mm (LxBxH)	61003011

Other versions and dimensions available on request

ISOHEAT®

High Tech Engineering



ISOHEAT®

Your partner for electrical heating systems for many years

We develop and produce customer-specific electrical heating systems for industry and research.

The name ISOHEAT® stands for quality and competence.

Thanks to our decades of technical knowledge in electrical heating technology and more than 60 employees who specialise in solutions for industrial heating technology, we are convinced that we're the right partner for you.

Our customers' satisfaction and trust is based on the fact that we provide our services on time and to the agreed quality.

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