MSS

High Power, High Temperature heating cable for use on pipework and vessels.

MI CABLE

Stainless Steel Sheathed
Mineral Insulated Heating Cable

- *High performance output*
- *Wide temperature range*
- *300V twin core, and 600V single core versions*
- *Fire resistant*
- *High mechanical resistance*

INTRODUCTION

The MSS range of stainless steel sheathed Mineral Insulated (MI) heating cable has been developed to meet the specific need for a cable having a high temperature capability and electrical resistance values needed for long circuit lengths.

To meet the requirement, Heat Trace have combined a stainless steel sheath with heating conductors to enable an operating temperature of 600°C with resistance values from 36100Ω/km down to 5.3Ω/km.

MI Cables have excellent mechanical strength and are non-combustible. They are series resistance heaters which must be designed to provide the required heat output.

APPLICATIONS

The high temperature capabilities may be required for the following typical applications:-

Nuclear Industry - Sodium loops

Building Industry - Bitumen / asphalt heating

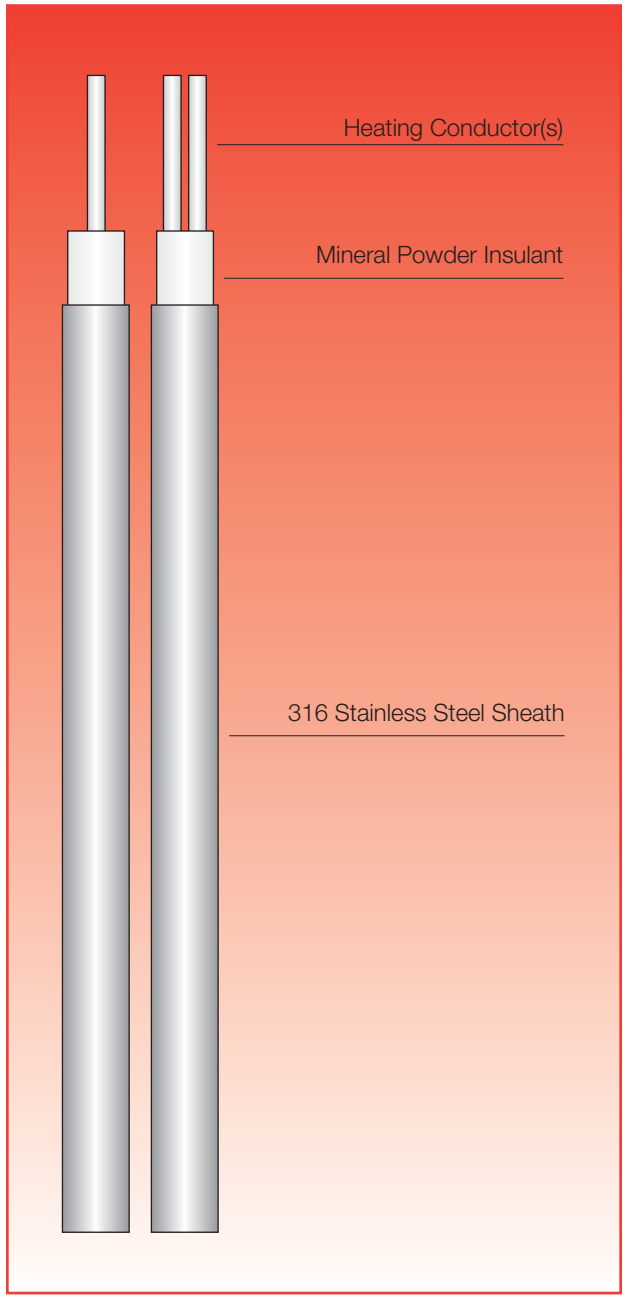
Metal Forming Industry - Melting of low melt alloys

The ability to be easily formed into shapes is useful for tank/vessel heating where unusual shapes (cones, hoppers, etc.) are encountered.

MI Cables may be used for most other general heat tracing applications if designed to provide the correct output. They may also be found in all underfloor (roads, ramps, sports grounds, horticultural, agricultural, space) heating duties where the mechanical strength of the cable is required.

MSS CORROSION RESISTANCE

SUBSTANCE	USAGE / RESISTANCE
Sulphuric Acid	Not recommended
Hydrochloric Acid	Not recommended
Hydrofluoric Acid	Not recommended
Phosphoric Acid	Not recommended
Nitric Acid	Check for specific data
Organic Acid	Suitable under most conditions
Alkalis	Acceptable
Sea Water	Not recommended
Chloride	Not recommended



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SPECIFICATION

SINGLE CORE, 600V MAXIMUM OPERATING VOLTAGE

Cable Reference	Cable Dia (mm)	Cable Res @ 20°C Ω/m	Cold Lead-in Cable Size mm²	Cold Lead-in Cable Dia (mm)	Rating Factor
MSS4.701N6560	4.70	6.56	2.14	5.3	1.0
MSS4.701N5250	4.70	5.25	2.14	5.3	1.0
MSS4.701N4260	4.70	4.26	2.14	5.3	1.0
MSS4.701B3280	4.70	3.28	2.14	5.3	1.0
MSS4.701B2790	4.70	2.79	2.14	5.3	1.0
MSS4.701B2300	4.70	2.16	2.14	5.3	1.0
MSS4.701B1640	4.70	1.64	2.14	5.3	1.0
MSS4.701B1250	4.70	1.25	2.14	5.3	1.0
MSS4.701B0980	4.70	0.98	2.14	5.3	1.0
MSS4.571B0820	4.32	0.82	2.14	5.3	1.0
MSS4.571B0660	4.45	0.66	2.14	5.3	0.98
MSS4.571B0560	4.57	0.56	2.14	5.3	0.95
MSS4.571A0490	4.32	0.49	2.14	5.3	1.0
MSS4.571A0330	4.32	0.33	5.5	6.81	1.0
MSS4.321A0262	4.32	0.262	5.5	6.81	1.0
MSS4.321A0230	4.32	0.23	5.5	6.81	1.0
MSS4.321A0197	4.32	0.197	5.5	6.81	1.0
MSS4.571A0131	4.57	0.131	5.5	6.81	0.95
MSS4.701A0098	4.70	0.0984	5.5	6.81	0.92
MSS5.081A0065	5.08	0.0656	5.5	6.81	0.85
MSS4.321CU0033	4.32	0.0339	5.5	6.81	1.0
MSS4.571CU0021	4.57	0.0214	5.5	6.81	0.92
MSS4.951CU0013	4.95	0.0134	5.5	6.81	0.88
MSS5.331CU0008	5.33	0.00846	5.5	6.81	0.83
MSS6.101CU0005	6.10	0.00531	8.43	7.62	0.72

CABLE SHEATH	316 Stainless Steel
CABLE INSULATION	MgO
INSULATION RESISTANCE	1000 MΩ/1000m
MAXIMUM SHEATH TEMPERATURE	600°C (1112°F)
EARTH LEAKAGE	3mA/100m

ORDERING CODE

MSS 4.70 1 N 6560

- MSS — 316 Stainless Steel Sheath
- 4.70 — Diameter of Cable (mm)
- 1 — Number of Conductors
- N — Conductor Material:- *(CU=Copper, A=Alloy 60, B=Constantan,N=Nichrome)*
- 6560 — Conductor Resistance †

† Conductor resistance is measured in Ohms per 1000m

TWIN CORE, 300V MAXIMUM OPERATING VOLTAGE

Cable Reference	Cable Dia (mm)	Cable Res @ 20°C Ω/m	Cold Lead-in Cable Size mm²	Cold Lead-in Cable Dia (mm)	Rating Factor
MSS4.062N36100	4.06	36.1	2.0	7.37	1.06
MSS4.062N29500	4.06	29.5	2.0	7.37	1.06
MSS4.062N24600	4.06	24.6	2.0	7.37	1.06
MSS4.062N19700	4.06	19.7	2.0	7.37	1.06
MSS4.062N16400	4.06	16.4	2.0	7.37	1.06
MSS4.062N13100	4.06	13.1	2.0	7.37	1.06
MSS4.062N10500	4.06	10.5	2.0	7.37	1.06
MSS4.062B09000	4.06	9.0	2.0	7.37	1.06
MSS4.062B08200	4.06	8.2	2.0	7.37	1.06
MSS4.062B06600	4.06	6.6	2.0	7.37	1.06
MSS4.062B05600	4.06	5.6	2.0	7.37	1.06
MSS4.062B04600	4.06	4.6	2.0	7.37	1.06
MSS4.322B03300	4.32	3.3	2.0	7.37	1.0
MSS4.572B02300	4.57	2.3	2.0	7.37	0.95
MSS4.952B01600	4.95	1.6	2.0	7.37	0.87
MSS4.322A00980	4.32	0.98	3.33	9.27	1.0
MSS4.322A00820	4.32	0.82	3.33	9.27	1.0
MSS4.322A00660	4.32	0.66	3.33	9.27	1.0
MSS4.452A00490	4.45	0.49	3.33	9.27	0.97
MSS4.952A00330	4.95	0.33	3.33	9.27	0.87
MSS5.332A00230	5.33	0.23	3.33	9.27	0.81
MSS5.842A00160	5.84	0.16	3.33	9.27	0.74

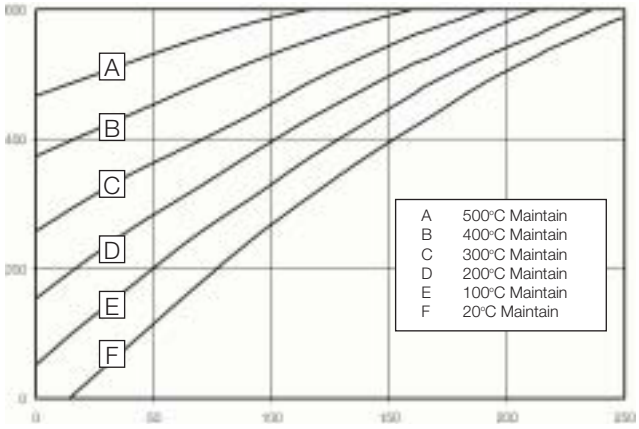
RATING FACTOR

Use the graph below to ensure that the cable sheath does not operate at an unsafe temperature.

1. Determine the "corrected" cable power output by multiplying actual design output by the rating factor in the table opposite.
2. Find the point on the graph where the "corrected" W/m output intersects with the maintain temperature of the equipment to be heated (interpolation may be necessary).
3. Read off from the left hand (y) axis the anticipated cable sheath temperature. This must be less than the cable maximum withstand temperature, and below any other limiting temperatures, eg. Temperature Classification.

POWER OUTPUT vs. SHEATH TEMPERATURE

Cable Sheath Temperature (°C)



Corrected Power Output W/m

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