

Application Report

Antenna heating



Electrical heat tracing – in the application of heated antennas

Modern electrical heat tracing technology plays a decisive role in many fields, e.g. for the heating of parabolic reflector- and radio link antenna systems. With those, eltherm assures - even with snow and ice- an ice-free antenna and hence a proper reception.

Essential for an interference-free reception

One application of heating cable in the communication engineering is to heat antenna reflectors. Snow-and ice-formation on the surface of the reflector would inevitably lead to an interference of the reception or the transmitting power. For decades of experience with reputable antenna manufacturers and network operators the heating of the antennas by means of our heating mats has turned out to be extremely effective.

Advantages of the eltherm antenna heating mats are as follows:

- High weathering resistance even in extreme sites
- Minimum weight-loading
- Effective, holohedral and homogeneous heat distribution
- Each antenna model type can be heated by means of tailored heating mats
- Humidity-resistant
- High lifetime
- No additional insulation required
- No maintenance necessary, therefore ready for operation in far reaches sites

Benefit from our experience in the thermal/visual supervision and control of your antenna heating. An extensive range of customer-oriented controllers that are exactly fitted to your application built the basis for it.

The eltherm philosophy: „We are in the business of developing heat tracing systems“

eltherm's range of products for production of heat tracing systems combines high quality heating cables and components with individual systems. As a manufacturer of heating cables with a comprehensive range of resistance heating cables with PTFE-, FEP-, PFA-as well as glass-fibre insulation, self-regulating heating cable, measuring and control devices and accessories eltherm advises its customers on the planning phase already. This ensures that all the heat tracing equipment is exactly tuned to the whole system, and that the system meets the specification and the sometimes extreme requirements.

Beyond this, eltherm also offers complete systems, developed in close cooperation with the customers, for use in other markets, e.g. Chemical-, Petrochemical-, Automotive- or Food- Industry.

Antenna heating in the application

• 25 m Antenna



• 11 m Antenna



• 4,5 m Antenna



Source: eltherm Projects

Ice and snow don't stand a chance

What kind of configuration does a heating has to have in order to keep an antenna frost-free during the winter at -25°C ?

We have the solution: It consists out of heating mats with integrated heat insulation and teflon-insulated heating elements. The heating mats are durable attached to the antenna heating surface by means of primed adhesive plains. After the installation, the mats are optimally fitted to the reflector and therefore obtain a good heat distribution.

Of course, the built-up of the heating corresponds with the VDE-directives.

The heating is designed so that – even at an ambient temperature of 30°C – the maximum temperature of approx. 70°C will not be exceeded.

For parallel connected heating mats there is an integrated

temperature switch for each heating mat, which turns off the heating at 80°C .

The special built-up of the heating mats enables us to heat every antenna type. eltherm is able to offer you purpose-built plastic dishes which reliably protect the heating from external climatic influences and harm by birds.

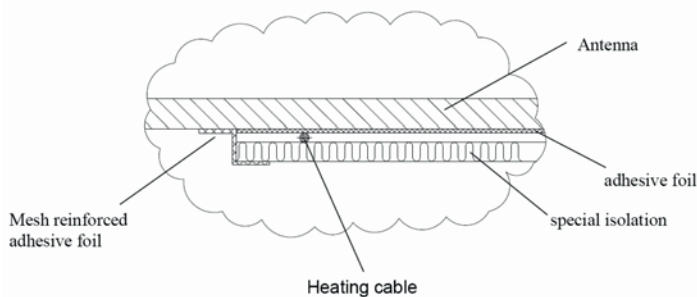
The eltherm engineers are permanently endeavoured in close cooperation with the customer to heat even intricate antenna construction types. May it be an antenna with a diameter of 14 m with 190 heating mat segments on a satellite earth station or a 30 cm radio link antenna on an icy mountaintop.

The eltherm project engineers will also find the appropriate solution for you.

Especially for the sector of radio link antenna systems, eltherm is able to offer you three different heating alternatives – depending on the meteorological conditions on the site:

- Indirect heating by means of insulated heating mats on the cylindrical area of the antenna random – primarily used where on one hand the performance limits are tucked tight or where a heating of the antenna back is not possible.
- Indirect heating by means of insulated heating mats on the cylindrical area of the antenna random and the antenna back, either with special pre-cut or two heating mats with serious connection.
- Direct heating of the front foil or front cover of the radio link antenna by means of an especially developed heating foil. It will be applied to the inner part of the cover. By means of this, it is possible to avoid snow coating on the front cover - even on the most extreme sites.

Detail – Heating mat rim :



eltherm: innovations in heat tracing

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