eltherm®
innovations in heat tracing

Freeze protection for reliable transmission operation of
- Parabolic satellite antennae
- Radio link antennae

Keeping Antennae Snow and Frost Free

Snow and frost piling up on parabolic reflector antennas can severely hinder transmission and impair proper reception of radio and signal transmission. Eletricial heat tracing offers a technically proven, economically viable and reliable means of preventing this. Antenna manufacturers and network operators testify to years and years of reliable freeze protection with eltherm heated mats. This application report shows how and why.

Advantages of antenna heating mats:

- Resistance to extreme climatic conditions
- Resistant to moisture
- Minimum weight-loading
- Effective, holohedral and homogeneous heat distribution
- Tailor made to fit specirfic antenna types
- Long-term reliable function
- No additional insulation required
- Maintenance-free

Antenna heating in operation

25 m Antenna

11 m Antenna

4.5 m Antenna

Source: eltherm Projects

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Electrical Heat Tracing on Antennae

Ice and snow don't stand a chance even at -25°C

Heating mats with integrated heat insulation and teflon-insulated heating elements are attached to the antenna surface by means of primed adhesive plains. The finished mats are then fitted directly onto the reverse side of the reflector, ensuring good heat distribution. The special built-up of the heating mats is adapted to every antenna type and design, all diameters and sizes, including special solutions for terminal stations.

The system design

The electrical heating system consists of a heated mat with integrated insulation (PE air cushion foil, coated on both sides with aluminium) and PTFE-insulated trace heater. The heated mat is fitted snugly to the full antenna surface. A safety switch is integrated in the heated mat, shutting off the heating at >80°C. A temperature sensor PT-100 is pre-installed in the heated mat to allow a temperature controller to be connected.

The eltherm technical edge:

- Effective and full-surface heat transmission, thus: No warping of the antenna when heating is on
- Constant self-stabilising heat performance
- No overheating in direct sunlight
- Integrated insulation, reduced heat loss
- Energy efficiency
- No aging and performance loss

Schematic view of eltherm electrical antenna heating system