Cathtect Engineering (Pty) Ltd.

# Gradient Control Mat

## Data Sheet

Ground control mats are ideal in situations that have voltage differences between structures, Gradient control mats are installed around above ground pipeline structures to protect workers from potentially hazardous voltages that can be present on cathodically protected pipelines.

### Features and Characteristics

- Low cost design
- Fast construction using 4ft x 8ft sheets and exothermic welding
- Avoids handling and bending of zinc ribbon
- Low inductance design limits step and touch potentials due to lightning and AC faults
- Data available on design life and anode selection

### Recommended Locations for Use

***The Gradient Control Mat should be applied where voltage differences can be present. This can include sites such as:***

- Test stations in a power line corridor, to address step voltage, as well as touch voltage if test station connections can be contacted.
- Within 4 feet of above grade piping in stations. Matting can follow the path of the pipeline to afford step and touch voltage protection within facilities.
- Around valve controls at block valve sites, and at metering and regulator facilities near piping
- Approaches to fences and gates, to assure uniform voltage at contact points

### Advantages of Mat Decoupling

Recommends decoupling gradient control mats to improve CP on the pipeline, and offers the affordable Solid-State Decoupler (SSD) line for use in conjunction with the Gradient Control Mat.

### Decoupling mats using the SSD allows for several distinct advantages including:

- The galvanic potential of the mat material has no effect upon pipeline CP
- Pipeline CP readings can be taken in the vicinity of the mat
- The life of the anodes used to protect the mat are significantly increased