



## SPECIFICATION GUIDELINE CDE-0316

### Advanced Snow and Ice melting system For ramps and access ways (Viagard™ EM2-XR)

#### **Purpose :**

The purpose of the ramp heating system is to prevent impeded access to buildings, car parks etc. due to snow and icy conditions.

#### **Specification :**

The Product shall be supplied and delivered by:  
Tyco Thermal Controls (UK) Ltd.  
3 Rutherford Road  
Stephenson Industrial Estate  
Washington, Tyne & Wear  
NE37 3HX

Contact no: 0800 969 013  
E-mail: [Salesuk@tycothermal.com](mailto:Salesuk@tycothermal.com)

The snow and ice melting system shall be of the self regulating type designed specifically for this application and approved to European standard VDE (CE approved), as manufactured by Tyco Thermal Controls and known as Viagard EM2-XR.

The self regulating Viagard heating cable shall be constructed with a heavy braid and thick, pressure extruded, modified polyolefin jacket to provide maximum resistance to installation damage. The cable shall be capable of withstanding a crushing force of 8900N and a cut through force of 100N/0.25mm blade.

The heating cable must be capable of demonstrating a life expectancy in excess of 25 years.

To give snow/ice protection under typical UK winter conditions the spacing and cover shall be as follows:

	<b>Cover/Depth</b>	<b>Spacing</b>
Concrete	50-70mm	300mm (ramp on ground)
	50-70mm	250mm (suspended ramp)
Asphalt topped concrete Paving Stones	50-60mm	300mm (ramp on ground)
	80-90mm	250mm (ramp on ground)

The system shall be capable of producing 300 W/m<sup>2</sup> (installation at 300mm spacing in concrete)

The Raychem heating cable shall be attached to the reinforcement bar, stand-off mesh or other suitable surface to ensure the recommended design cover and spacing as above.

The Raychem ramp heating system shall be installed, tested and commissioned strictly in accordance with the manufacturer's instructions.

The Raychem Viagard heating cable shall not be installed beyond the maximum circuit length indicated in the Tyco Thermal Controls Technical Handbook. Please contact Tyco Thermal Controls with any queries.

The system must be operated at optimum energy efficiency. Therefore the control system should be capable of detecting ambient temperature, ground temperature and moisture, and known as **VIA-DU-20** as manufactured by Tyco Thermal Controls.

The controller must have the following functions:

- freezing rain precaution function where the heating cable will be switched on pro-actively when there is a risk of freezing rain or sleet
- Digital/easy to read display
- monitoring of sensor defects
- Alarm relay for remote monitoring at the BMS

Each ramp heating circuit shall be protected electrically by an MCB to BS EN 60898 type C or D or equivalent. Additionally a residual current device of 30 mA sensitivity that trips within 100 ms should be used.

Wiring between the control panel, the control sensors, the contactor, the ramp heating circuit's terminal boxes and the distribution board shall be done by an electrical contractor.

Isolators for each circuit shall be provided as an integral part of the local motor control panel or local distribution board.

All ramp heating circuits to be switched via a contactor.

#### **Product, technical, and performance requirements :**

The Viagard snow and ice prevention system must:

- Be self regulating and provide 90W/m @ 0°C.
- Have a life expectancy in excess of 25 Years.
- Be constructed with a heavy braid and thick, pressure extruded, modified polyolefin jacket to provide maximum resistance to installation damage.
- Be capable of withstanding a crushing force of 8900N and a cut through force of 100N/0.25mm blade.
- Be compliant with the following:
  - o Cold Bend Test IEEE-515
  - o Deformation Test IEEE - 515
  - o Crush Test VI-493
  - o Dynamic cut through Test CSA-22.2-130
  - o Tension test VI-493
  - o Insulation Resistance Test CSA-22.2-130
- Be compatible with the energy efficiency control and monitoring device unit known as VIA-DU-20. This unit must have ambient and ground temperature, and moisture sensing, capabilities.

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## *RAMP HEATING DRAWING NOTES*

On drawing:

Raychem snow and ice melting self regulating heating tape

In **Engineering Notes** column:

The heating system must be of the energy efficient self regulating type, known as Raychem Viagard EM2-XR heating cable as manufactured by Tyco Thermal Controls.

The controller shall be capable of detecting ambient temperature, ground temperature and moisture, known as VIA-DU-20 as manufactured by Tyco Thermal Controls.

Install in strict accordance with manufacturers instructions preferably by a recommended specialist installer.

Circuit protection by a MCB to BS EN 60898, Type C.