

# Roof and Gutter Protection

## GENERAL:

All gutters and roof edges shall be fitted with a constant wattage snow and ice melting system to prevent damage and icicle formation, as shown on the design plans, known as DEVIsnow™, manufacturer DEVI™ by Danfoss.

The system shall be complete with fixed length, twin conductor, constant wattage heating cables and a dedicated control unit.

The advanced controller shall save energy by using a programmable unit combined with moisture and ambient sensors. Use of dual sensors ensures no energy is consumed in cold dry weather.

All system components shall be covered by an Environmental Product Declaration (EPD) to transparently report and document the environmental impact, based on a product life-cycle assessment (LCA), CE marked and certified according to the relevant IEC (EN) codes.

BIM families shall be provided.

## FIXED LENGTH CONSTANT WATTAGE ROOF AND GUTTER HEATING CABLES:

All gutters and roof edges at risk shall be fitted with a constant wattage heating cable, to prevent winter damage and icicle formation by maintaining continuous water flow. known as DEVIsnow™, manufacturer DEVI™ by Danfoss. The heating cables shall be designed specifically to melt snow and ice, be ready made in various lengths and pre-terminated with cold leads. The range shall be twin conductor resistive heating cables, suitable for 230V or 400V power supply, available as 20W/m with 2m or 3m cold leads or 30W/m output with 2m, 3m, 10m or 30m cold leads. All covered by an Environmental Product Declaration (EPD), CE marked and tested to demonstrate compliance with IEC EN 60800:2009.

The constant wattage heating cables shall be round in profile, robust in construction and comprise a 360° fully screened twin conductor cable with a tough, black, UV resistant outer jacket and cold leads with solid conductors.

## ENERGY EFFICIENT, CONTROL SYSTEM **[SELECT ONE OR MORE OPTIONS]:**

### **[1] Multi circuit programmable control and monitoring system:**

All roof and gutter trace heating circuits are controlled with a DIN rail mounted electronic programmable controller (DEVlreg™ 850) capable of independently operating two systems, areas or zones with maximum four sensors. To provide much improved energy efficiency, control is based on inputs from separate moisture and ambient sensors. For higher rates accuracy, the sensors are digital, and the moisture sensor has a built in element for snow melting, priority setting is possible. BMS interface through relay contacts. The DEVlreg™ 850 controller is covered by an Environmental Product Declaration (EPD).

### **[2] Single circuit, single application electronic thermostat, surface mounted (DEVlreg™610)**

All roof and gutter trace heating circuits are controlled with a surface mounted electronic thermostat (DEVlreg™610) covered by an Environmental Product Declaration (EPD).

## DESIGN:

The manufacturer or operations partner shall be able to provide full design details including electrical schedules providing cable lengths, circuit breakers, circuit start up currents, operating currents and loads, line list summary and single line details; system layout and schematic drawings indicating power connections, tees and end seals; controller configuration listing and wiring diagrams.

## **EXECUTION:**

### **Roof and Gutter Heating Installation :**

All roof and gutter heating cables shall be installed, tested and commissioned in strict accordance with the design plans and the DEVI Roof and Gutter Application Manual, within the defined maximum circuit lengths and using a 2500 V DCMegger. Installation is possible on virtually any type of roof, gutter and down pipe, however, do not place in direct contact with bitumen. PE-foil shall be used as an intermediate layer between the bitumen and the heating cable.

### **[SELECT ONE OPTION]**

[1] The system shall be installed, tested and commissioned by specialist installers trained by the manufacturer

[2] The system shall be installed, tested and commissioned under periodic supervision by the manufacturer or specialist installation partner

### **Electrical Connection:**

Connections between the electrical supply, control panel and the roof and gutter heaters circuits shall be installed by an approved electrical contractor and protected by MCB (BS EN 60898 type C or D) and RCD (30 mA sensitivity, tripping within 100ms).