

Cold Store Protection

GENERAL:

All ground surfaces in cold stores exposed to the risk of frost heave or condensation and all sliding or swing doors/gates shall be fitted with a constant wattage protection system, as shown on the design plans, manufacturer DEVI™ by Danfoss.

The system shall be complete with constant wattage heating cables, in pre-terminated fixed lengths or pre-assembled heating mat along with a dedicated energy saving controller and associated sensors.

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.

COLD STORE PROTECTION SYSTEMS :

All ground surfaces, as shown on the design plans, shall be fitted with robust, fully screened, constant wattage heating cables to prevent frost heave and condensation. To simplify installation the heating cables shall be supplied in fixed lengths or pre-assembled mats, each pre-terminated with a cold lead by the manufacturer. All shall be covered by an Environmental Product Declaration (EPD), CE marked and tested to demonstrate compliance with IEC EN 60800:2009 class M2.

[SELECT ONE OR MORE OPTIONS]

[1] Twin conductor, fixed length, constant wattage heating cables (DEVIflex™ 6/10/18T, 230 V):

The heating cable shall be DEVIflex™ 6/10/18T, manufacturer DEVI™ by Danfoss. These robust, twin conductor, fully screened constant wattage heating cables are designed to prevent frost heave and condensation in cold stores and to provide frost protection of doors and gates. To simplify installation each are available in various fixed lengths and supplied pre-terminated with a 2.3m cold lead, their power outputs are 6/10/18W/m respectively. All are covered by an Environmental Product Declaration (EPD), CE marked and tested to demonstrate compliance with IEC EN 60800:2009 class M2.

[2] Twin conductor, constant wattage heating mat (DEVIsnow™ 300T, 230 V and 400 V):

The heating mat shall be DEVIsnow™ 300T, manufacturer DEVI™ by Danfoss. These robust mats are pre-assembled from twin conductor, fully screened constant wattage heating cables and are recommended for simple, fast and safe ground installations. They are designed specifically for installation in concrete and to prevent condensation in cold stores. With a power output of 300W/m², the mats are available in various sizes, for 230 or 400 V power supplies and come with a 10m or 30m pre-terminated cold lead. DEVIsnow™ 300T is covered by an Environmental Product Declaration (EPD), CE marked and tested to demonstrate compliance with IEC EN 60800:2009 class M2

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

[1] Single circuit, single application electronic thermostat, DIN rail mounted (DEVlreg™330)

All cold store heating systems shall be controlled with a simple DIN rail mounted electronic thermostat, known as DEVlreg™330, manufacturer DEVI™ by Danfoss. The thermostat shall have a button to adjust the temperature setting (-10°C to +10°C), an LED that shows standby (green) or heating (red) and a relay with two contact pairs. The thermostat shall be installed via an all-pole disconnection switch and the set temperature measured and controlled using the supplied ground temperature wire sensor. All system components shall be covered by an Environmental Product Declaration (EPD).

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

All cold store heating systems shall be controlled with a simple electronic thermostat, surface mounted (outdoors or indoors), IP44 and 10A rated, known as DEVIreg™610, manufacturer DEVI™ by Danfoss. The thermostat shall have a temperature setting adjustment (-10°C to +50°C), an LED indicating the current mode (heating, standby or fault) and a relay with two contact pairs. The unit shall be 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; controller configuration listing and wiring diagrams.

EXECUTION:

Cold Store Protection System Installation :

All cold store protection systems shall be installed, tested and commissioned in strict accordance with the design plans and the DEVI Cold Store Application Manual.

[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 cold store heating 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).