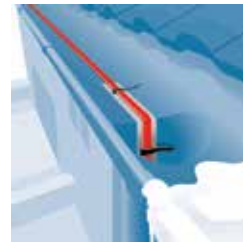


Raychem SPECIFICATION GUIDELINE



GM-2CW AND GM-4CW

SNOW MELTING SYSTEM FOR GUTTERS, ROOFS & DOWNPIPES

All gutters, down pipes and roof edges shall be fitted with an energy efficient, constant wattage trace heating system, Raychem GM-2CW or GM-4CW, as manufactured by Pentair's Thermal Building Solutions, to prevent winter damage and icicle formation.

- The system shall be a pre-terminated kit complete with cold lead, heat shrink connection with integrated splice separator, energy efficient controls and a 10 years extended product warranty.
- The constant wattage heating cables shall be capable of demonstrating a lifetime in excess of 20 years.
- The constant wattage heating cables shall be designed according to IEC EN 62395 and have ETFE inner jacket insulation and LSOH outer jacket electrical insulation and be UV resistant, which is 3rd party approved by VDE
- The heating cables shall be capable of demonstrating a power output of 30 W/m.
 - The heating cable shall be capable of being used for 230 VAC (GM-2CW) or 400 VAC (GM-4CW).
 - UV resistant (3rd party approved).
 - All heat-tracing circuits shall be controlled via an energy efficient, integrated ambient temperature and moisture sensing thermostat, known as Raychem EMDR-10, as manufactured by Pentair's Thermal Building Solutions.
 - The thermostat shall be able to reduce the power output of the constant wattage heating cable by 30% at temperatures above $+1,5^{\circ}\text{C}$ to save extra energy by using a duty-cycle operation mode.
 - To get extra energy savings, the thermostat shall deactivate the post heating function at temperatures above $+1,5^{\circ}\text{C}$ after the heating program has finished.
- The temperature sensor shall be a PTC (FL103) type, IP54 rated, capable of withstanding temperatures of -30°C and 80°C .
- The moisture sensor shall be a PTC type sensor with variable sensitivity settings.
- All heating cables shall be installed within the maximum circuit length, tested and commissioned strictly in accordance with the manufacturer's instructions, preferably by a specialized installer named by the supplier. The commissioning report must be registered to gain benefit from the 10 year product warranty.
- Each heat-tracing circuit shall be protected by a MCB (BS EN 60898 type C or D or equivalent) and RCD (30 mA sensitivity, tripping within 100 ms). Isolators shall be provided for each circuit.
- Wiring between the trace heating circuits, terminal units, the thermostat(s), the contactor and the distribution board shall be carried out by an electrical contractor.

In Engineering Notes Column

- All gutters, down pipes and roof edges shall be fitted with an energy efficient, constant wattage trace heating system, known as Raychem GM-2CW or GM-4CW, to prevent winter damage and icicle formation.
- All heat-tracing circuits shall be controlled via an energy efficient, integrated ambient and moisture sensing thermostat, known as Raychem EMDR-10.
- The system shall be complete with a 10 year product warranty.
- The heat-tracing systems shall be installed, tested and commissioned strictly in accordance with Pentair's recommendations and preferably by a specialized installer named by them.



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