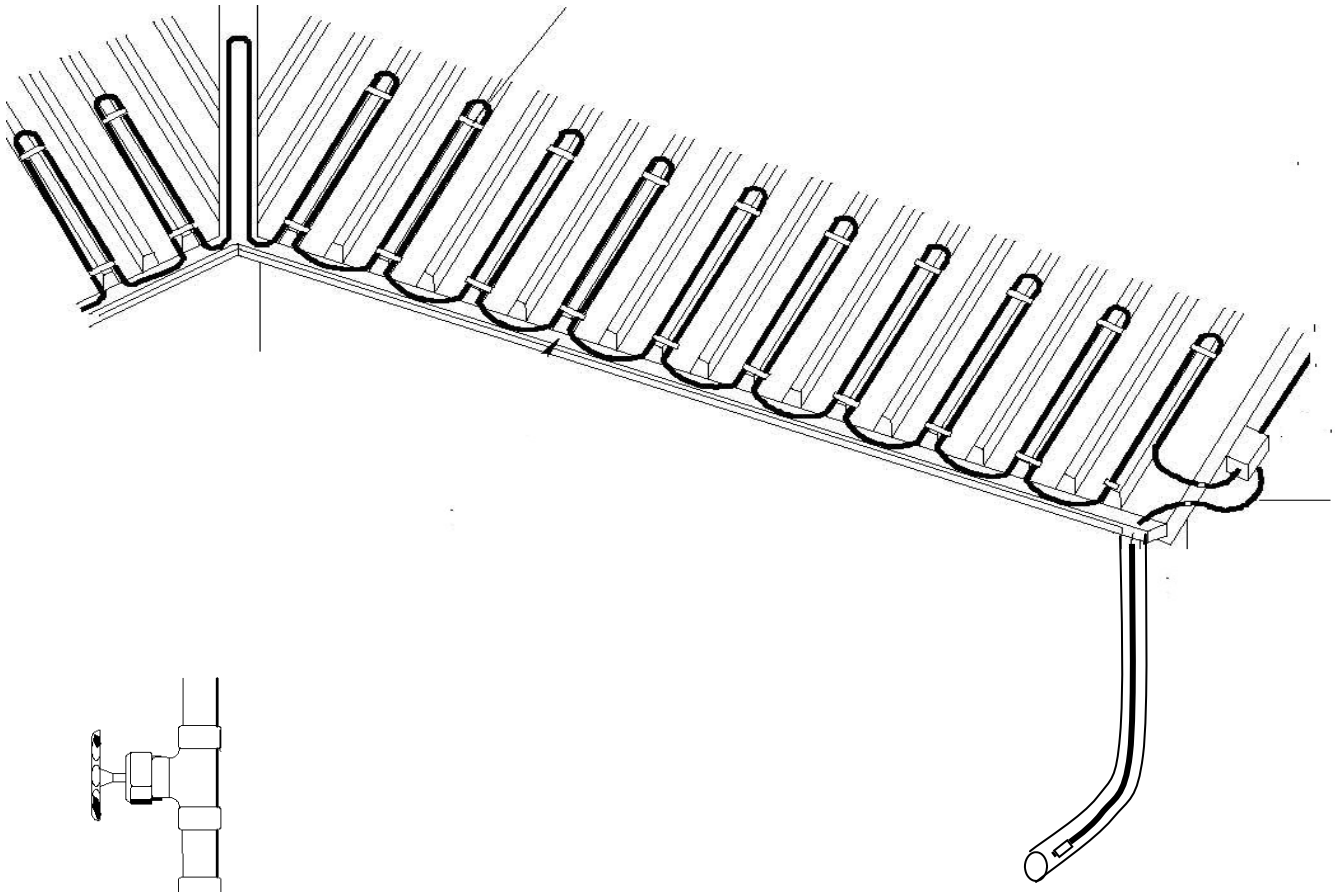
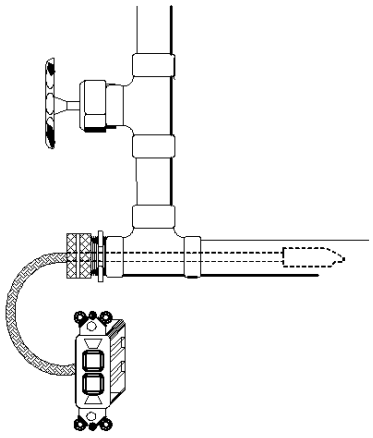
ARCTIC TRACE ®

Installation Information

Roof, Gutter and Snow Melting De-Icing System

For Type E Series Heating Cable & Accessories





du Alaska Incorporated

DESCRIPTION

Arctic Trace Roof and Gutter Heat Tracing Systems (E SERIES) heater cables provide a solution for ice dams that can build up and damage buildings and gutter systems. The cables' self-regulation feature provides additional benefits:

Lower Energy Consumption - the cable reduces its power output as the ice and snow disappear.

Fail-Safe Temperature Limiting - the cable will not overheat and melt or damage temperature sensitive roof coatings

Suitable for - roof de-icing, gutters and downstouts, snow melting, soil heating, pipe and vessel surface freeze protection.

COMPONENTS

206C Water Proof Cord Grip - provides a 1/2" MNPT watertight entry seal into a junction box (not included). It is recommended that a NEMA 3R, 4 or 4X box be used and mounted under an eave or other protected area. Each cord grip will terminate one heater cable.

660C Universal Roof Mounting Clips - are used for all types of installations. Clips come 25 to a box; order one box per eight feet of eave or one box for every 100 feet of cable installed on flat roofs (nails or screws not included).

305C End Seal Kit - provides a waterproof seal at the end of each heater cable circuit. Each kit contains 1 seal.

C14880 Power Connection Kit - provides a cord type power connection with GFCI safety. Each kit contains 1 GFCI with 32' pig tail, wire pressure connectors and heat shrink.

C33129SP Junction Box - provides a 4 gang weather proof power connection junction box. Each kit includes 1 junction box, 1 clear cover, 1 GFCI including on/off switch (Components ship unassembled).

1544 Automatic Gutter Ice Melting Control - computerized ice melting control that senses both moisture and temperature ice melting below 38°F while moisture is present. Operation continues a period of time there after to insure complete melting. Contol includes ice melting sensor and water proof junction box for power connection.

330C Aluminum Foil Tape – may be used to secure the heater cable to the bottom of the gutter. Each roll of tape will accommodate 46M (150') of gutter. Gutter must be clean for foil tape to adhere properly. As an alternate, the cable may be laid loose in the bottom of the gutter without being secured with foil tape.

INSTALLATION INSTRUCTIONS

1. Before installing heater cable, allow it to warm up to room temperature. Keep grommets and shrink tube warm until needed. *(Keep inside of jacket pocket.)*
2. Clear all gutters and downspouts of debris. *(Protect hands with gloves).*
3. Remove any sharp edges that could damage the heater cable.
4. Mount weatherproof junction box in a sheltered area.
5. Start heater cable installation at the junction box, leaving a drip loop where the cable exits the junction box.
6. Terminate heater cable per instructions and connect to power wiring with supplied wire nuts.
7. It is recommended that the heater cable be megger tested between bus wires and ground braid after installation to verify cable integrity. Heater cable should have a minimum insulation resistance of 20 megohms when tested with at least a 500VDC megger, a 2500VDC megger is preferred.
8. The circuit breaker can be used to turn the heater cable off and on. Optionally, an automatic snow or ice detector may be used to control the cable.
9. Two copies of a caution notice indicating the presence of electric deicing and snow melting equipment on the premises are included in the power connection/entry seal kits. One notice must be posted at the circuit breaker panel and the other notice posted next to the control device. Both notices must be clearly visible

WARNINGS

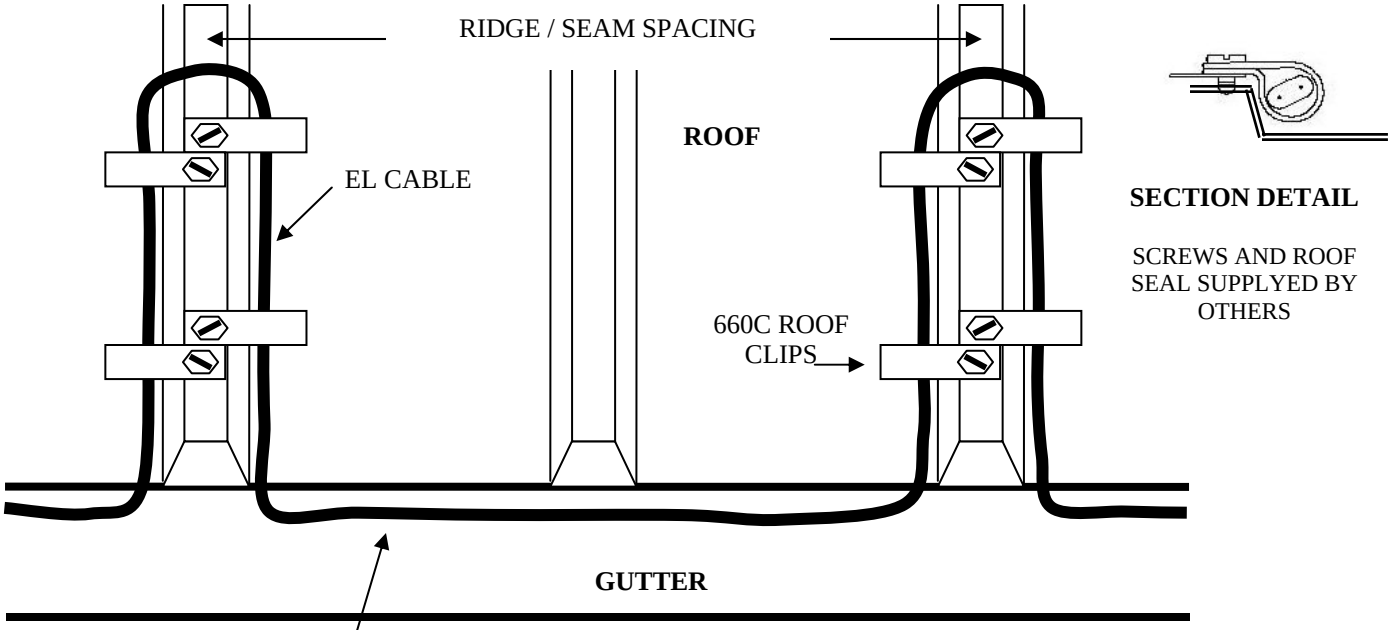
- ***Article 426 of the National Electric Code requires that all outdoor electric deicing and snow-melting equipment be provided with branch circuit ground-fault equipment protection.***
- ***Moisture must be kept away from the live electrical parts of the cable or electrical faults will develop.***
- ***If nuisance tripping of ground-fault breakers occurs due to condensation in the junction box, electrical connections should be moisture proofed by use of a coating or sealant.***
- ***The cables ground braid must be connected to electrical ground for proper protection through circuit breakers. All electrical connections should be made by a licensed electrician.***
- ***Do not twist bus wires together – this will result in a short circuit and damage the cable.***
- ***Damaged heater cables must be repaired or replaced.***
- ***Avoid laying ladders against the heater cable.***
- ***Before energizing the circuit each season, make sure that the gutter system and downspouts are free of leaves and debris.***

Metal Roof—Metal roofing materials such as standing seam or corrugated, as well as tile/concrete roofing materials that have distinct ridges or grooves, must be properly addressed when installing heat tracing. Metal roofs in particular pose an avalanche potential that could damage the heating cable if it were installed in a serpentine pattern. To combat this, the cable is installed parallel to the standing seams or along the length of a corrugation.

The partial sketch below depicts EL roof and gutter cable as it would be installed on a corrugated metal roof. This method would also be used on standing seam or tile roofs. Fasten with sheet metal screw using neoprene sealing washer. If washers are not available, coat screw and upslope edge of clip with silicone sealant. Exact cable spacing may vary depending on the rib design of the roof. Typically trace every other rib.

Any number of other attachment methods may be used for holding the heating cable in place. Whichever method is used should take into consideration the integrity of the roof and the heating cable.

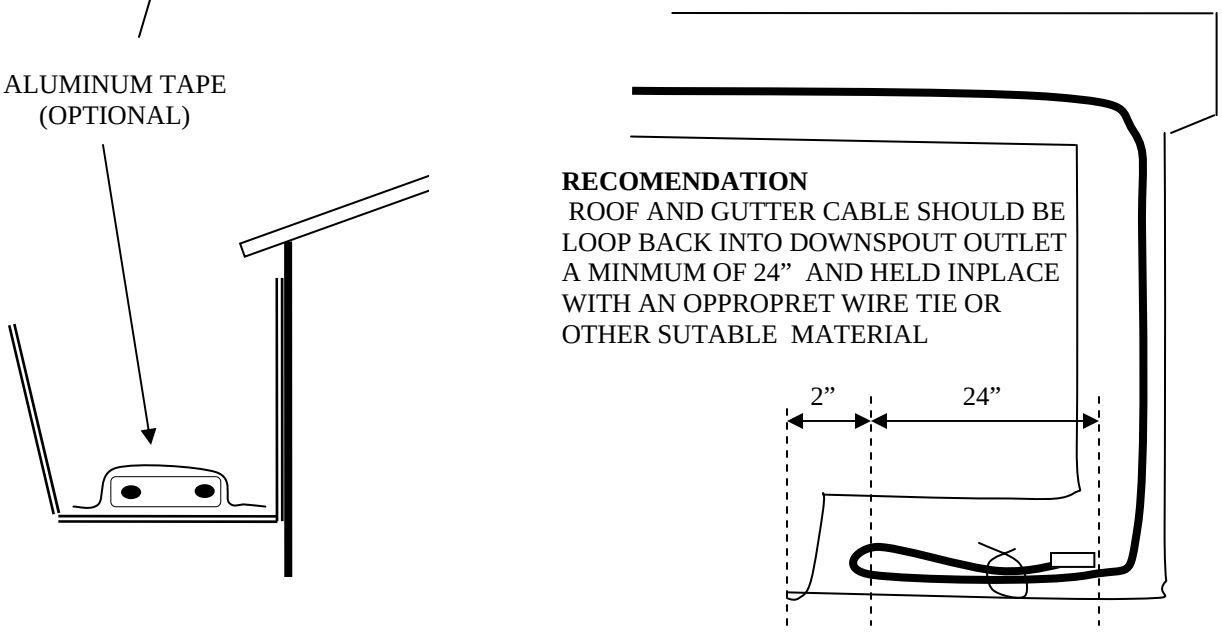
How far up the roof the heating cable should travel may be determined by meas-uring the distance as shown below. The heating cable should loop past the point where an imaginary line extending up from the inside wall would pass through the roof or ridges in the roofing material. This spacing, combined with the desired level of protection, will determine what multiplier to use to deter-mine the footage of cable required.



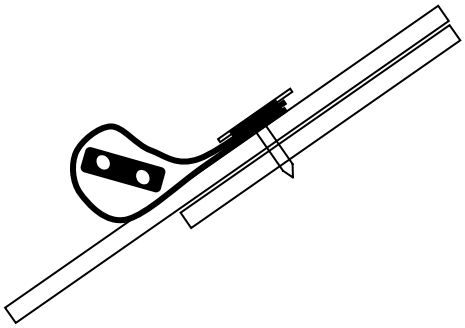
SECTION DETAIL

SCREWS AND ROOF SEAL SUPPLYED BY OTHERS

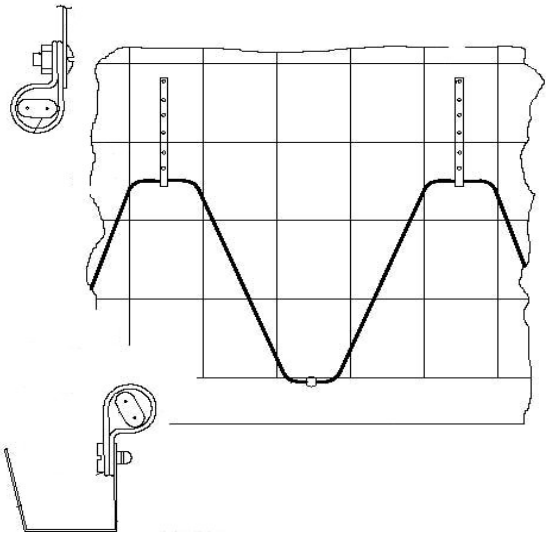
GUTTER AND DOWNSPOUT



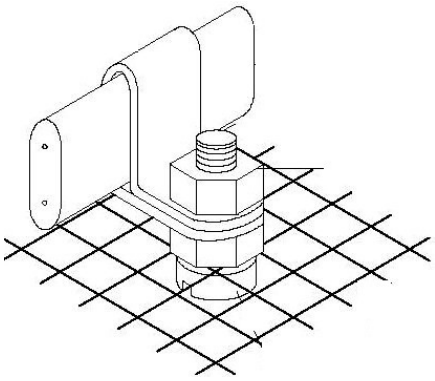
Asphalt / Shake Shingle Roof—All shingle roofs (fiberglass, cedar shake, flat tile or concrete shingle) can utilize heating cable installed in a serpentine pattern as detailed in this sketch. Fasten with nail, coat nail head and upslope edge of clip with silicone sealant.



Tile Roof—Use perforated pipe strapping to attach the clips to the roof. For new construction, the strapping should be secured to the wooden substructure by means of pegging or nailing as the roof tiles are installed. For existing tile roofs, a bead of adhesive (not furnished) should run along the perforated strapping for a length of 76mm (3") prior to slipping the strapping up under the tile. **Do not use an excessive amount so as to leave a visible blob of adhesive on the outer edge of the tile.** The adhesive bead should be large enough to deform and smear along the underneath surface of the tile. Allow the adhesive cure to full bonding strength before attempting to install the cable and clips



Flat Roof—Adhesive (not furnished) should be used to bond clips studs to the flat surface. The roof surface should be clean at the bonding locations. Do not penetrate flat roofs with screws or nails as leaks may develop. Allow the adhesive to cure to full bonding strength before attempting to install the cable and clips.



Snow and Ice Cable Control—All roof and gutter snow and ice melting systems should be controlled to turn the heating cable on and off as conditions warrant. There are three basic means to activate a roof and gutter system:

Manual On/Off Switch— Part # C33120SP Economical and simple to install; re-quires diligence on the part of the operator.

Ambient Sensing Control— Part # TRD115 Turns system on and off based on ambient temperature. Heating cable will frequently be energized during nonrequired times.

Automatic Control— Part # 15444 Roof or gutter-mounted ice sensor turns system on when moisture is detected and temperatures are in the range when freezing can occur on roof overhangs or in gutters.

du Alaska Incorporated
6706 Greenwood Street
Anchorage, Alaska 99518

Phone: (907) 522-3004

Fax: (907) 349-1023

E-mail: dualaska@alaska.net

www.arctictrace.com