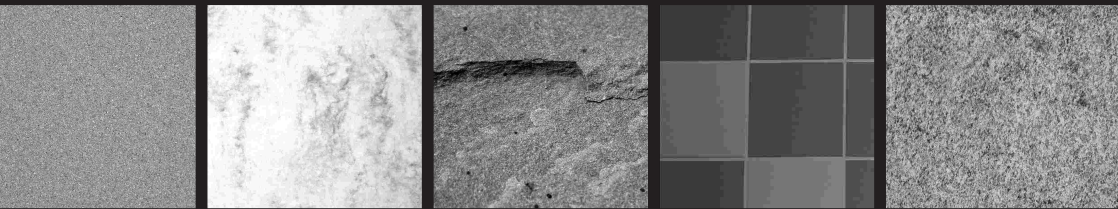


UNDER TILE INSTALLATION INSTRUCTIONS



• Ceramics • Wooden Laminate • Terracotta • Stone • Marble • Slate • Cork • Vinyl



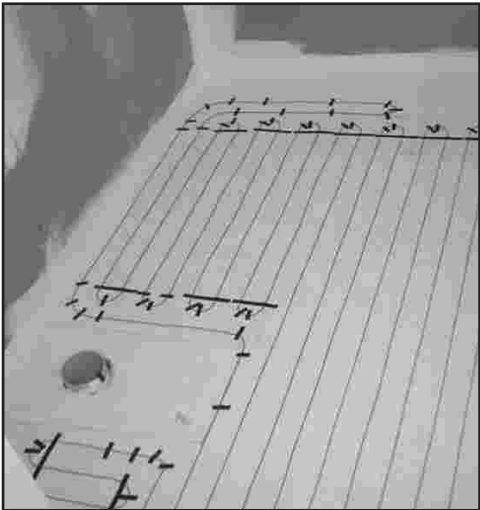
On Demand Electric Heating

*PO Box 420
Whitianga, New Zealand
Ph: 0064 7 866 4434 Fax: 0064 7 866 4423
www.hotwire.co.nz*

Under Tile Spooled Elements : Under Tile Set Mats : Under Carpet Heating
In-concrete Storage Heating : Radiant Ceiling Heating : Air-conditioning
Panel Heaters : Mirror Demisters

Elements Approximate m² & Spacing Guide

Element Watts	Colour	Lm Length	Ohms/m	-5%	Total Ohms	5%	Amps	Approx m ² Coverage	Approx Element Spacing
150	White/Red	13	27.13	335.03	352.67	370.30	0.65	1.00	77
200	White/Black	17	15.56	251.28	264.50	277.73	0.87	1.33	78
250	White/Green	21	10.10	201.02	211.60	222.18	1.09	1.67	80
300	White/Blue	25	7.05	167.52	176.33	185.15	1.30	2.00	80
350	White/Yellow	30	5.04	143.59	151.14	158.70	1.52	2.33	78
400	White/Orange	35	3.78	125.84	132.25	138.86	1.74	2.67	76
500	White/Brown	43	2.46	100.51	105.80	111.09	2.17	3.33	77
600	Blue	53	1.66	83.76	88.17	92.58	2.61	4.00	75
700	Green	63	1.20	71.79	75.57	79.35	3.04	4.67	74
800	Yellow	72	0.92	62.82	66.13	69.43	3.48	5.33	74
900	Orange	82	0.72	55.84	58.78	61.72	3.91	6.00	73
1000	Red	91	0.58	50.26	52.90	55.55	4.35	6.67	73
1250	Pink	118	0.36	40.20	42.32	44.44	5.43	8.33	71
1500	Brown	141	0.25	33.50	35.27	37.03	6.52	10.00	71
1750	Grey	168	0.18	28.72	30.23	31.74	7.61	11.66	69
2000	Black	189	0.14	25.13	26.45	27.77	8.70	13.33	71
2500	Violet	235	0.09	20.10	21.16	22.22	10.87	16.66	71
3000	White	294	0.06	16.75	17.63	18.52	13.04	20.00	68



Introduction

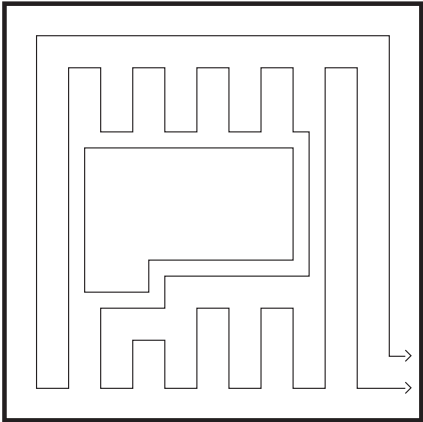
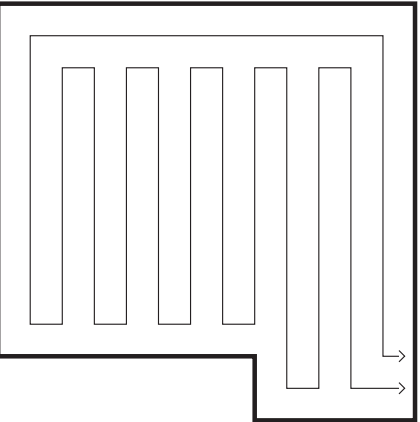
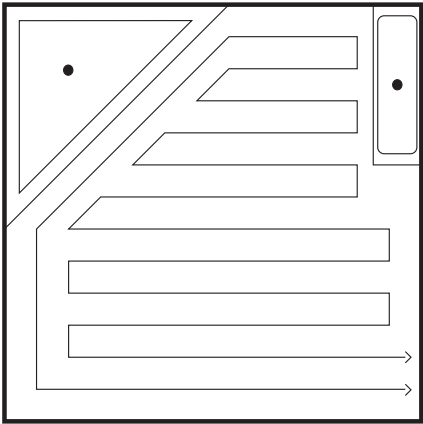
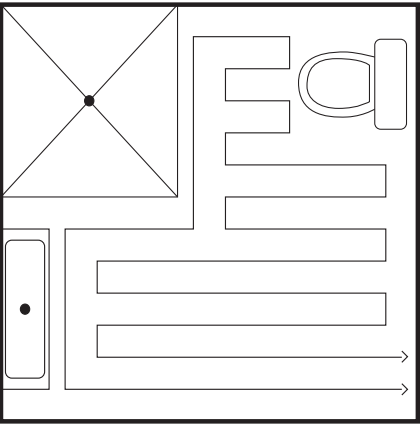
Prior to starting please read the following installation instructions carefully.

The Hotwire elements are set length continuous resistance wire with conducting cables (white) connected to each end. The heating element must NOT be cut, shortened or lengthened.

Typical Element Design Layout

Step 3 - Installation of Element

Note: Every area and layout differs. Work out your required layout and coverage.

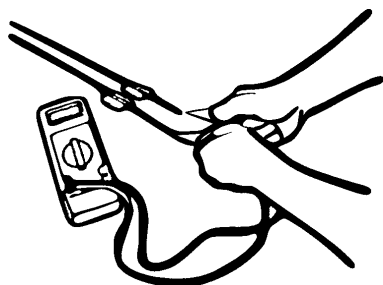


✕ = Thermostat Position and Start/Finish Point

Electrical Requirements & Element Test

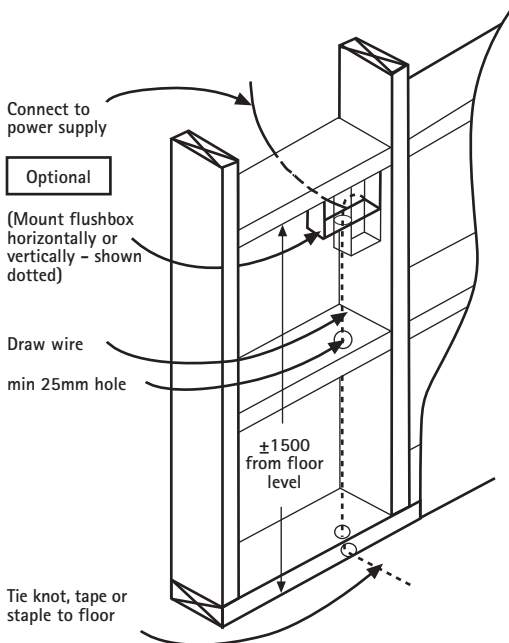
- The installation of elements is to be in accordance with the national wiring rules.
- Please see the cross section pre-wire requirements below before starting your installation.

The Hotwire™ elements have completed comprehensive testing. However, immediately prior to tiling, check the continuity of the element. It should match the Ohm rating listed above, with a tolerance of $-5\%/+5\%$. Also check the insulation resistance between the conductor and the earth screen = infinity.



Pre-wire Flush Box Requirements

- Pre-wire preparation should be carried out prior to the element installation.
- Please pass to your Electrician



Note:

- All Hotwire™ thermostats are designed to fit a vertical flush box.
- Use strong TPS, or similar for your draw wire, and ensure the cavity is clear from floor to flush box to allow the draw wire to move freely.

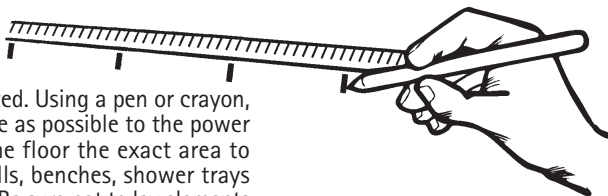
Step One – Floor Preparation

- Floors must be entirely clean, dry and level. If necessary, sand or grind the floor first. Clean working surfaces will mean good adhesion for a long life installation. Where there is no waterproofing, you must Prime the floor with primer, and allow drying for 30 – 40 minutes. Concrete floors must be cured properly.
- The heating element must not be installed on irregular surfaces.



Step Two – Marking the floor for element installation

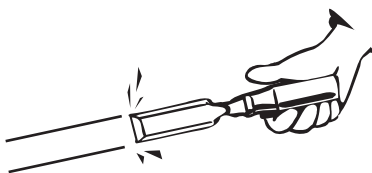
- Calculate the area to be heated. Using a pen or crayon, mark your start point as close as possible to the power supply, and then draw on the floor the exact area to be heated. Come off the walls, benches, shower trays etc the distances you require. Be sure not to lay elements in areas that may have floor fixtures installed after tiling, such as doorstops and toilet etc.
- Once the heated m^2 area is defined. E.G $4 m^2$. You can then choose the required size element using the chart guide on page 1. $4 m^2 = 600$ watt element.
- Mark the spacing intervals using the chart guide on page 1.



Element spacing formula E.G $4 m^2 \times 1000 = 4000 \div 53$ (element length) = 75 mm spacing.
The minimum spacing = 50 mm and maximum = 100 mm.

Step Three – Installation of Element (refer to page 2)

- It is essential at the start point, that you chisel, or chase 2 short channels in the sub-floor at 50 mm spacings, to accommodate the "black joins" of both the first, and second power supply cords. This is needed to rebate the joins into the sub-floor, minimising their height and to create a flat surface, and to protect the joins from damage during tiling.
- Unroll 3 metres of the white power supply cable, until you have reached the 'black join' of the heating element, marked by individual colour.
- Tape the black join into the first channel of the sub-floor at your start point. Leave the power cord to one side whilst laying the element.
- Following the 'perimeter' floor markings, lay the heating element, to the further most corner of the room, securing with adhesive tape at the corners.
- You now work your way back towards the start position, laying the element back and forth in parallel even lines, being guided by the space markings.
- Secure the element with adhesive tape at even spacing. **Note:** If you are having trouble sticking



the tape to the sub-floor, you may need to apply spray adhesive to assist adhesion, where you are taping.

- You will note a 1/2 way marker on the element, that allows a gauge to your heating cover, relative to remaining element.
- When you have laid approximately 70% of the designated area, roll out the remaining element and second white power supply cord. Then before continuing laying the remaining heating element, secure the second black join back at the start point, and tape into the second channel.
- Now lay the remaining element in reverse back to the point where you last stopped.
- So to maintain even heat distribution, you may need to adjust previously laid and taped element, by increasing or decreasing the element spacing. The key is to try and maintain an even spacing across the floor, and if necessary, you may need to redesign your layout.

Note: You can hide extra element down the side of toilets etc provided –

1. The element spacing is **never** less than 50 mm.
2. The element is **never** crossed over or is cut.
3. The heating element is **never** placed in the wall cavity.
4. Should never cross two or more rooms.
5. Avoid placing elements where doorstops may be screwed into the floor.

- Once you are happy with the layout and position of your heating element, you need to secure both white power leads to the draw wire, and carefully pull them up the wall cavity to the thermostat flush box position.
- **Thermostat/Floor Temperature Sensing Probe:** If this type of controller is being used, you now need to position and tape fix the probe on the floor, directly below the thermostat position and “exactly between” 2 runs of heating elements. Ensuring the probe lead can reach the thermostat position.

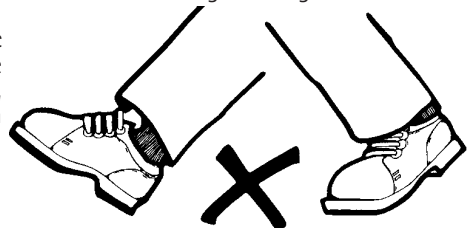
Note: The sensing probe should be placed in conduit, with no more than one angled bend, to ensure that it can be removed, if servicing is required.

Note:

- Look over the total installation to ensure that the element is flat to the floor, and where necessary, use further tape to secure down lifting element.
- **Self-Leveling screed:** This can be used to protect the element during tiling. If you apply a self-leveling screed, you will need to wait 24 hours for the screed to cure, before tiling. Consult your tiler of their requirements.

Finishing:

- Repeat the continuity test to ensure the element has not been damaged during the installation.
- Once the element is installed, **avoid all traffic over the area until the tiling is laid.** If there is a delay in the tiling, cardboard, or similar, should be placed over the elements for interim protection.



Tiler Information – Please ensure your tiler reads the following

Only use tile adhesive and grout compatible with under floor heating.
For further information see BRANZ – Good Tiling Practice.

The heating element incorporates PTFE Teflon double insulation, with a multi-stranded conductor and will withstand normal tiling practices. However, we ask you to note and take care of the following:



- **With care**, you can tile directly over the elements.
- We recommend applying a thin bed of "flexible" tile adhesive with a standard double "round ended" notch trowel (10 -12 inch)
- A latex modified (acrylic, PVA, SBR) cement based grout must be used, with at least a 10 - 15% "by weight of solid based" latex content.
- Where possible move the tile adhesive in the same direction of the elements runs.
- Where waterproofing is required, and has not been applied prior to the heating installation, please seek advice from your waterproofing supplier, on a suitable product to be applied over the elements.
- **Take extra care when cleaning between tiles prior to grouting.**
- Ensure that enough adhesive is used to eliminate hollows or voids under the tiles.
- **Wear soft soled type shoes while tiling.**
- Do not carry out other work on top of the elements, such as tile cutting.
- Avoid dropping tools on the elements.
- Do not place ladders on the elements.
- **Be extremely careful if the lifting of tiles is required.**
- **Endeavour to limit the twisting of feet as this may cause irreversible damage to the heating.**
- Avoid excessive foot traffic.
- Keep the heating area free of dust and foreign matter.
- Close off the area to other trades before the tiling has taken place.

Important Notes

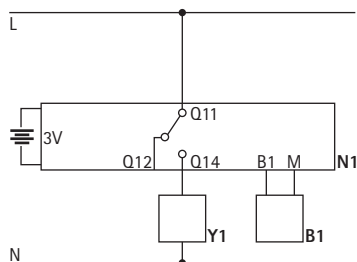
Note: Continuity alarm monitors are available from your supplier on request. The monitor can be attached to the power lead ends, and will set an alarm, if the element is damaged during tiling.

If at any time you damage, or cut the heating element, STOP and call The Heating Company Helpline 0800HEATING (432 846)

Electrical Connection – Please ensure your electrician reads the following

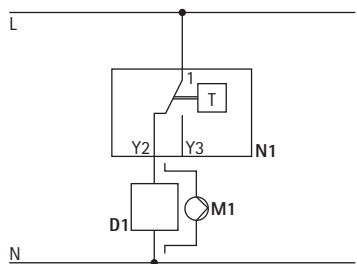
- You are not required to be an electrician to lay the heating element, as the Hotwire heating element has been classified as an electrical appliance, but all electrical connections including the thermostat, must be carried out by a registered electrician.
- All circuit wiring supply and thermostat connection must be undertaken in accordance with the current electrical standards and national wiring regulations.
- The heating units must be separated from other heat sources.
- The maximum thermal resistance between the heating element and the room = 0.4 m sq. K/w
- Using the label provided, note the heated zones installed, and fix the label adjacent to the distribution board.
- All electrical supply circuits must be RCD (Residual Current Device) protected with a rated residual operating current not exceeding 30 mA.

Hotwire Thermostat Connection Cross-Section

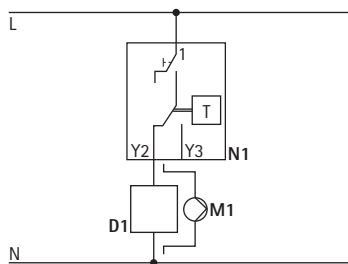


B1 QAH11 external temperatures sensor
N1 RDE20.1 room temperature controller
Y1 Regulating unit
L, N Live, Neutral AC 24...250V
B1 Signal input "External temperature sensor"
M Measuring neutral "External temperature sensor"
Q11, Q12 N.C. contact (for N.O. valves)
Q11, Q14 N.O. contact (for N.C. valves)

RDE20.1 Digital 7-Day Timing Thermostat



RAA02/RAA02.1N



RAA03

RAA02 & RAA03 Manual Thermostat

- White power supply cable at one end = Brown (phase)/Green (earth)
- White power supply cable at one end = Blue (neutral)/Green (earth)

Hotwire™ heating elements comply with Electrical Standard AS/NZS 603335.2.96.2004 and IEC800

Operation

Wait 7 days for the tile adhesive to dry before you turn your heating on. Once the heating is commissioned the initial heat up time will vary depending on the sub-floor type (concrete or timber), insulation, thermal characteristics and ambient temperature. Performance will improve with use.

Do's and Don'ts

Do's

- Carefully read the installation instructions prior to commencing your installation.
- Check the element is working before you start.
- Ensure the surface is clean and clear of obstructions.
- Pre plan your element layout and stay with the recommended element spacing.
- Maintain even element spacing.
- Protect the heating element from damage at all times.
- Plan required pre-work and drilling before laying the heating element.
- Protect the element with cardboard or similar after the installation and before tiling.
- Take care when tiling not to damage or move the element.
- Ensure that enough tile adhesive is used so not to leave gaps or voids under the tiles.

Don'ts

- **Don't** cut or shorten the heating element.
- **Don't** commence installation on concrete floors that have not fully cured.
- **Don't** allow the heating elements to touch or cross.
- **Don't** allow traffic over the heating elements until tiled.
- **Don't** remove the heating element off the spool other than during the installation.
- **Don't** store tiles, sharp or heavy objects on the elements while tiling.
- **Don't** switch on the heating until the tile adhesive has fully cured.

Footnotes

- The lowest ambient temperature that the heating element can be installed equals – 200°C
- The minimum radius for bending the heating element equals 20mm.
- The thickness of covering materials should be at least 5mm.
- Contact the manufacturer for advice if materials other than those recommended are used.
- The appliance is not intended for use by young children, or infirm persons, without supervision.
- Young children should be supervised to ensure they do not play with the appliance.



HotWire™ Warrantanty Certificate

The Warranty Certificate must be properly completed after installation.

HotWire™ heating element/s carry a ten year product manufacturer's guarantee (thermostats carry a two year warranty) on the condition that –

- 1. The installation instructions have been read and the installation is carried out strictly to those instructions.
- 2. That the Warranty Certificate is completed correctly in ledgeable English. It must be given to the HotWire agent at the time of any defect inspection.

The HotWire™ warranty does not cover installations by unauthorised trades people, faults caused by incorrect installations, incorrect designs supplied by other parties, damage caused by persons other than the installer, or subsequent damage that may occur.

If the HotWire™ agent is required to inspect or repair any faults caused by any of the above, then all work will be fully chargeable.

If the HotWire™ Heating Cable is deemed to be faulty, it is the manufacturer's obligation to repair or supply an equivalent heating element/s (free of charge to the customer), without incurring any secondary charges linked to repairing of the heating cable.

HotWire™ Warranty applies to:

Name _____ Phone _____

Address _____ Fax _____

Email _____

Contractor/Installer _____ Installed Date _____

Phone _____

Electrical Contractor _____ Installed Date _____

Phone _____

Mat Size _____ Wattage _____

Floor Type

Floor Covering

Concrete Floor ☐

Tiles ☐

Wooden Floor ☐

Vinyl ☐

Parquet ☐

Supplier Details and Stamp

Note: This Section is required to be completed at the time of purchase to validate the warranty.

Company Name _____ Date of Sale _____

Sales Person _____

Note: To register and then validate your warranty, the above needs to be filled in, and posted or faxed to – The Heating Company NZ.

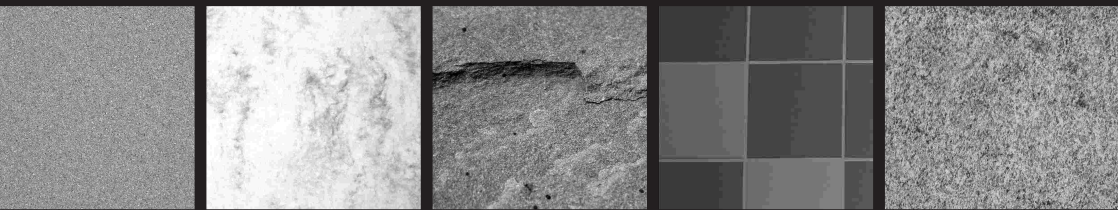
PO Box 420

Whitianga

New Zealand

Fax: +64 7 866 4423





*PO Box 420
Whitianga, New Zealand
Ph: 0064 7 866 4434 Fax: 0064 7 866 4423
www.hotwire.co.nz*
