Hotwire

warm your soul

Hotwire In Screed Installation Manual

Please read this instruction manual. It includes important information that will assist you and save you time and money such as,

To calculate the wire spacing start with the M2 of the area to be heated.

Multiply this by 1000. Then divide this answer by the length of the element. The answer will be the space at which the element should be laid.

*See page 5 for further details.

Hotwire (Australia Head Office)
Factory 3 / 756 Burwood Highway
Ferntree Gully Vic 3156

Phone 1300 HOTWIRE
Fax +61 (03) 8678 1337
www.hotwireheating.com.au

Hotwire
FLOOR HEATING

Contents

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Hotwire FLOOR HEATING

Step 1 Read This Manual

Please read this manual. It includes everything you need to know to successfully install Hotwire.

Incorrect installation of Hotwire may lead to any warranty claim being denied.

In some States and Territories of Australia the installation of Hotwire Under Tile Heating must be performed in its entirety by a licensed electrical contractor. Whist in others a licensed contractor is only required for the connections to the thermostat. Please check with your local electrical authority or Electrical Contractor to verify the requirements applicable to your State or Territory.

The Hotwire element cannot be cut, shortened or lengthened in any way.

Note: Water Proofing

It does not affect Hotwire whether the water proofing is installed under the screed or on top of the screed. Please check with the manufacturer of the water proofing as to their specifications.

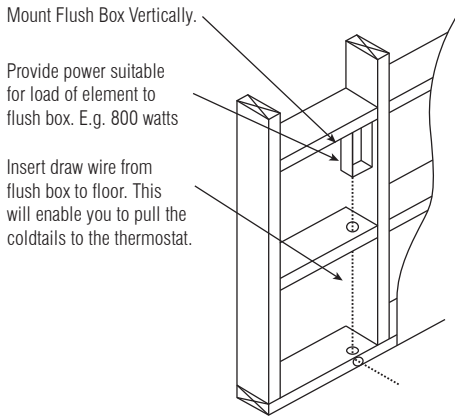
Step 2 Pre wire or "Rough In"

Three things are required before Hotwire can be installed. Please see the diagram.

1:Power supply. You will need power capable of running the Hotwire element you are installing. Eg 800 watts

2:Flush Box. A vertically flush box will need to be installed. This is a standard light switch / power point plate.

3:Draw Wire. You will need a draw wire through the wall cavity or chased into wall (if brick) and run through conduit.



Step 3 Floor Preparation

The floor needs to be completely clean. Sand, lumps of gyprock glue etc will affect your Hotwire installation. So make sure you clean the floor well. Sweep up all the dust, a once over with the vacuum is also a good idea if you have one handy.

Step 4 Cable Spacing

This is really important to an excellent Hotwire installation, so please read this

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carefully.

Calculate the EXACT m2 of the area to be heated and multiply it by 1000 (this is to bring the measurement to square millimeters). Then divide that answer by the length of the element. This is printed on the side of the spool. The answer will be the cable spacing and should be between 75 and 120 mm. If your answer is outside this check your measurements again as you have made a mistake or have the wrong element. If this is the case do not proceed with the installation.

$$\text{Cable Spacing} = \frac{\text{M2 of floor X 1000}}{\text{Length of Cable}}$$

The above formula is a good guide but does not take into account the loops at the end of the cable runs so take 5% off your answer. So for example if your answer was 90 mm start installing the cable at 85mm apart.

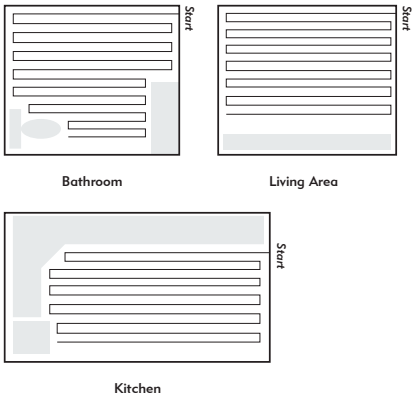
It is a good idea to cut a jig to the size you need it rather than use a tape measure the whole time. A off cut of wood is fine, in the picture we used an off cut of electrical cable.

Step 5 Plan the installation

This is a step where you can come undone if you don't plan properly.

The Hotwire element CANNOT be cut or shortened in any way. So have a look at the room and work out what is the most logical and simple way to run the cable around that room. You want to be doing as many long runs as possible.

Try and leave the longest wall to last. That way if you have a little too much or too little cable left you can make an easy adjustment by coming a bit further away or going right up close to the wall. Neither option will affect the heating of the room in any way.



Step 6 Check the element

Before installing the element it is always a good idea to ensure it has not been damaged during transit. We check every element before it leaves our warehouse but there is the possibility that it may get damaged by a

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courier.

If you have a multimeter then you can check the cable against the following table.

If you don't have a multimeter don't panic we have you covered too.

Watt	m2/130	Length	Ohm/m	Amps
300	2	17.65	9.99	1.30
450	3	26.47	4.44	1.95
600	5	35.29	2.50	2.61
750	6	44.12	1.60	3.26
900	7	52.94	1.11	3.91
1050	8	61.76	0.82	4.56
1200	9	70.59	0.62	5.22
1350	10	79.41	0.49	5.87
1500	12	88.24	0.40	6.25
1800	14	105.88	0.28	7.82
2100	16	123.53	0.20	9.13
2400	18	141.18	0.16	10.43
3000	23	176.47	0.10	13.04
3600	28	211.76	0.07	15.65

In the Hotwire Box is a continuity alarm. It is a small black box with 3 cables coming off the end.

1: Remove small white sticker over "On / Off" Switch
2: Fix the Black clip to the Brown wire of the element.
3: Fix the Red clip to the Blue wire of the element.
4: Fix the Green clip to the remaining wire.
5: Switch the tester on.
6: A Red Light then shows that the tester is on and working.
7: If you have a fault the tester will start "Beeping"

If the alarm does not beep you are good to keep installing. There is also another use for the alarm so keep it handy, more about that after the element is down.

Step 7 Fixing the Element

You will need lots of bits of the cloth tape that it is included in the box. Rip off pieces about 60 mm long. A good rule of thumb is when you think you have enough rip off twice as much again and you should be good to go. Just stick the pieces up a door frame or window sill.

Step 8 Roll out Element

You are now ready to start rolling out the element and sticking it down.

There is 3 meters of "Cold Tail" at the end of

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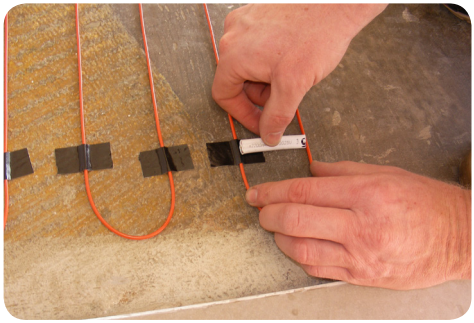
the element, you will notice a join between the cold tail and the thinner element wire. No part of the element or cold tail join can be in the wall cavity. This is dangerous and will void warranty.

Start spreading the element around the floor using the jig you cut earlier



Step 9 Half Way

You will notice a half way marker. It is little piece of tape around the element. When you see this stop and look at where you are up to. If you are not sure if you are half way through the floor check your measurements. Measure the remaining m2 and use 50% of the cable length to check if you are on target. If you are a little more or under half way you can spread the cable runs out or close them up a bit.

Step 10 More Tape

Stick any proud bits of element down. Some of the loops may have popped up a bit. You will also need to run a strip of cable right across the whole floor to ensure the cable does not get moved or damaged by other trades. It is a good idea to run right across the floor every meter.

Step 11 Install the Floor Probe

If using the Hotwire fully programmable thermostat you will now need to install the floor probe. If you are not sure check the small white box in the Hotwire box your product came in. The floor probe is a white cable that will be coiled in the bottom of that box.

Stick the probe to the floor. Make sure you don't stick any tape over the end of the probe. It is also critical to ensure that the probe is exactly half way between two cable runs. I.e. If your measurement was 100 mm. Ensure the end of the probe is 50 mm from one run of element and 50 mm from another.

Step 12 Pull Cables to Power Supply

Tape the ends both cables (cold tail and the floor probe) to the draw wire and gently pull the cable up the wall cavity or through the conduit to the position of the power supply.

No part of the element can be run inside the wall. The entire cold tail join must be buried under the floor.

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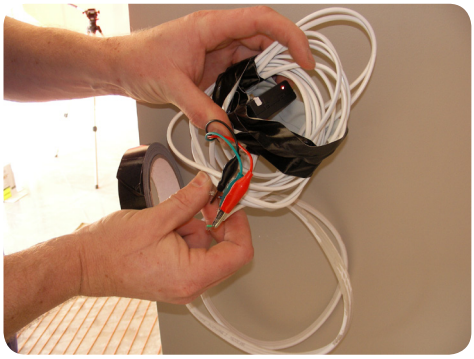
Step 13 Connect Continuity Alarm

Connect the continuity alarm again. This will ensure you have not damaged the cable during installation. It will also monitor the cable while you are laying of the screed.

1: Remove small white sticker over "On / Off" Switch (if you haven't already)
2: Fix the Black clip to the Brown wire of the element.
3: Fix the Red clip to the Blue wire of the element.
4: Fix the green clip to the remaining wire.
5: Switch the tester on.
6: A Red Light then shows that the tester is on and working.
7: If you have a fault the tester will start "Beeping" If there is no "Beep" you can continue with the installation
8: If the beep sounds at any time, before or during installation STOP IMMEDIATELY as this means that damage has occurred to the element and you will need to repair it before continuing.
9: Once you have finished the installation and before you start tiling reconnect the tester as above & turn on.
10: Keep the tester on until your tiling is complete.
11: If the tester light turns off you will need to replace the batteries.

It is a good idea to tape the alarm up with the tails so that it is not in your way while you finish the installation.



Step 14 Take a picture

Take a picture of the element layout. If there is ever a problem it will be handy to know how the element has been installed across the floor.

Step 15 Finished

Admire your work. You have just installed Hotwire.

Step 16 Notice to Tilers

Inside this manual is a yellow flier pointing out to tilers that Hotwire has been installed. Stick it to the wall in a prominent place. The flier also has a place to write your name and number for them to call with any questions.

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Materials Check List

Provided from Hotwire:

Hotwire Element:
Thermostat: (including a floor sensing probe)
Cloth Tape
Continuity Alarm
This Manual
Relay if required

You will also need,

Broom
Tape Measure

Electrical Connection of the Thermostat

All circuit wiring supply and thermostat connection must be undertaken in accordance with the current electrical standards and regulations. The heating units must be separated from other heating sources. The maximum thermal resistance between the heating element and the room = 0.4 m sq K/wAll electrical supply circuits must be RCD (Residual Current Device) protected with a rated residual operation current not exceeding 30 mA.

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 you lay the element.

Take care when tiling to make sure that you do not damage 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 are not fully cured.

Don't allow the heating elements to cross or touch.
Don't allow traffic over the heating element until the flooring has been laid.

Don't remove the heating element off the spool except during installation.

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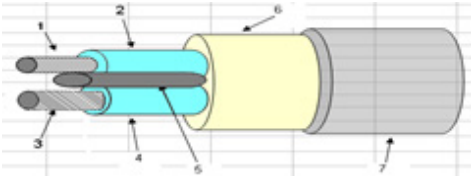
Don't store tiles sharp or heavy objects on the elements while tiling.

Don't switch on the heating until the tile adhesive has fully cured. Don't install the element over uneven floor surfaces.

In Screed Heating Technical Information



General:

1 Multi Stranded Heating Conductor (0.25mm -0.68)
2 Conductor Insulation 0.5mm RTI XPLE (natural)
3 Return Conductor AWG 20/7/28 TPC (0.5mm^2) : AWG 19/10/28 TPC (0.75mm^2).
4 Return Conductor Insulation 0.5mm RTI XPLE (natural)
5 Earth Conductor 1.0mm TPC (0.9mm^2).
6 Aluminised Mylar Tape 15mm Width & 65 Micron Thickness.
7 Outer Insulation 1.5mm RTI High Temp PVC.
Working Temperature 105 Deg C.
Working Voltage 230V AC, 50Hz.
Cable Dia 6.0mm.
Cold Tail 3.5m

Insulation:

A resistance R factor of 1.7m2 / 0C / w for heated floors.
High density polystyrene of fiber glass insulation materials should be used. (NZ 4218P, BRANZ 292, 344)
Perimeter 1m width insulation should be fitted.

Footnotes

The lowest ambient temperature that the heating element can be installed equals -80C

The minimum radius for bending the heating element equals 40 mm. 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. Laws in different states and territories of Australia differ. Please check with your local electrical authority if someone other than a licensed Electrician is able to lay the cable in your state or territory. In all states and territories 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.

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CUSTOMER WARRANTY AGAINST DEFECTS FOR HOTWIRE UNDER TILE HEATING PRODUCTS

Turnkey International Pty Ltd (ABN 36 086 830 766) trading as Hotwire Heating (Hotwire)

This document contains the Warranty against defects for goods (Goods) supplied by or on behalf of Hotwire to the customer, whether an individual or company, (Customer), who purchased the Goods through an authorised distributor of Hotwire.

1) General:

a) Hotwire's Goods come with guarantees that cannot be excluded under the Australian Consumer Law as set out in Schedule 2 of the Competition and Consumer Act 2010 (Cth). The Customer is entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. The Customer is also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure. What constitutes a major failure is set out in the Australian Consumer Law.

b) The benefits under this Warranty are in addition to the Customer's other rights and remedies under the Australian Consumer Law. If the Customer is not a "consumer" or the Goods are not "of a kind ordinarily acquired for personal, domestic or household use or consumption" for the purposes of the Australian Consumer Law, then to the extent permitted by law, Hotwire will not be liable for any direct or indirect or consequential loss in relation to any product defects.

c) Nothing in this Warranty is intended to exclude or attempt to restrict or modify the operation of the Australian Consumer Law or any other applicable law that cannot be excluded, restricted or modified by agreement. For the avoidance of doubt, Hotwire's liability in connection with the Goods is limited and excluded except to the extent that the limitation and exclusion is not permitted under the Australian Consumer Law and as set out in this Warranty.

2) Installation Manual:

a) The Hotwire installation manual (Installation Manual) is provided for the benefit of the Customer. The Goods and installation of the Goods ordinarily requires the technical skills of a qualified installer. Do not take any steps to install the Goods without a copy of the Installation Manual.

3) Installation:

a) Hotwire recommends that the Goods be installed by a registered Hotwire Installer (Authorised Installer).

b) Any installation by a person who is not an Authorised Installer must be carried out strictly in accordance with the Installation Manual taking into account the individual circumstances of the place of installation and a failure to do so may void or exclude the Customer's ability to claim under the Warranty.

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4) Warranty:

a) Subject to clause 7(b), Hotwire undertakes to repair or at its sole discretion to replace any part of the Goods manufactured by Hotwire which is found to have a manufacturing defect for a period of ten (10) years from the date of purchase.

b) The period of the Warranty described at clause 7(a) does not apply to the part of the Goods comprising (or being) the thermostat and the controller. The Warranty period in relation to the thermostat and the controller of the Goods is limited to two (2) years.

5) Exclusion and Limitation of Liability:

a) Hotwire excludes all conditions and warranties implied by custom, the general law or statute, except for:

i) Any implied condition or warranty the exclusion of which would contravene any statute or cause any part of this clause to be void; and

ii) The Warranty.

b) The Warranty does not apply if:

i) Unauthorised repairs or alterations are made to the Goods;

ii) The Customer fails to comply with all instructions of Hotwire (whether written or verbal) in relation to the fitting, installation and use of the Goods;

iii) The Goods are subjected to improper voltage or power surges, misused, damaged by accident, force of nature or any other acts beyond Hotwire's reasonable control; and/or

iv) The Goods are improperly installed or installed other than strictly in accordance with the Installation Manual (other than where such improper or other installation is carried out by an Authorised Installer).

c) The Warranty does not include calls to replace batteries, programme or re-programme thermostats and/or controllers, replace fuses or reset residual current devices or circuit breakers.

d) The total maximum liability of Hotwire under the Warranty is limited to replacing the Goods, repairing the Goods or payment of the replacement cost of the Goods.

e) Except as otherwise expressly provided in this Warranty, Hotwire will not be liable for any incidental expenses (including costs of inspection, testing, removal, reinstallation, storage or transportation), any other charges, costs or expenses of the Customer or any third party, personal injury, incidental damages, consequential losses, loss of profit, costs of business interruption, loss of opportunities or any like claims whatsoever arising from any use of, or incidental to, the Goods or their failure to operate, or arising out of Hotwire's negligence or breach of the Warranty.

f) If any component part of the Goods is manufactured by a third party or supplied to Hotwire by a third party, any warranty offered by Hotwire in relation to the Goods or a component part of the Goods will be limited to Hotwire's right of redress (if any) against the manufacturer or supplier of the component part of the Goods.

g) The Customer must keep Hotwire indemnified against:

i) All claims, expenses and liabilities of whatever nature including but not limited to loss

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of profit, which may be made against or which Hotwire may sustain, pay or incur arising out of the manufacture or sale of the Goods to the Customer, except in so far as the same arises from Hotwire's negligence or breach of the Warranty or a proper claim under the Warranty; and

ii) Hotwire's costs in attending to a Warranty call by a Customer which is without merit, excluded by this clause or where no Warranty is otherwise available to the Customer together with Hotwire's costs of defending any such claim by a Customer against Hotwire (including legal costs incurred by Hotwire).

To claim on this Warranty contact:

Turnkey International Pty Ltd
(ABN 36 086 830 766) trading as
HotwireHeating

Factory 3, 756 Burwood Highway,
Ferntree Gully, Victoria 3156

Telephone: 1300 HOTWIRE
Email: info@hotwireheating.com.au

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Factory 3 / 756 Burwood Highway
Ferntree Gully Vic 3156

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1300 797 060
hotwireheating.com.au

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Ferntree Gully Vic 3156

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Fax +61 (03) 8678 1337
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