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e:nergycarbon
Efficient low carbon heating systems

Ceiling and wall heating system
PLASTERING INSTALLATION GUIDE

This guide will help you through the process of installing your new Energy Carbon heating system. It should be read in conjunction with viewing the relevant video using the links at the end of this manual.

Please Read and understand the Installation guide before commencing work to avoid costly mistakes

Tools required

1. Nylon plasters trowel (to prevent any cuts/damage to heating panels) - not shown
2. Scrim tape
3. Tape measure
4. Panel pins/map pins
5. Heat Shrink Butt Connector, Adhesive Lined Crimp Terminal, Blue Wire Size1.5 – 2.5mm². *www.workshopsentialsonline.com*
6. Heat gun
7. Wire cutters
8. Good wire strippers
9. Ratchet crimp crimper
10. Pencil
11. 6-12mm drill bit
12. Sharp knife
13. Drill

TO START

- Open delivered box and check contents against invoice/delivery note
- Your kit will include each heating fleece that has already been cut to length and resistance tested in the factory.
- Print off your heating placement plans, you can now mark on each heating panel box which room they are to be used in.

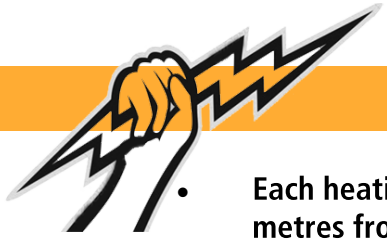
The heating fleeces are already cut to the designed length according to the building drawings supplied, should a fleece require cutting this must be done with a straight cut at a right angle to the copper strips, measurement of the length of fleece and a new resistance test must be noted on the drawings/paperwork.

Transformer

- Check style of transformer. Surface mount: to be mounted in a cupboard, roof space, control room; Flush mount, to be placed in room, hallway, low or high level.
- Check connection point of thermostat to confirm 12v or 230v supply.
- Check type of thermostat 12v or 230v, if thermostat signal voltage differs a relay will be required.
- If no thermostat is in use, the link can be jumped on the 12v and 230v connection see photo, to enable the system to be checked.
- Plan out location of transformer within a 10 metre cable run of the furthest heating panel location.
- Maximum cable run is 10 metres using 2.5mm multi strand cable, any cable runs over this distance and up to a maximum of 15 metres a 6mm multi strand cable must be used to avoid voltage drop and a reduction in heating performance.

Thermostat

All Room thermostats/occupation sensors to have a 4 core (5 core is cheaper) 1.5mm,



Electrician/1st fix

- Each heating fleece requires a 2.5mm multi strand twin core feed, no more than 10 metres from the transformer.
- Leave each cable within position of each heating fleece, according to the heating placement plan
- Each heating fleece cannot be closer than 50mm to each other, evenly placing the heating fleece across the ceiling ensures perfect comfort heating.
- Should the heating fleece need to be cut for lighting etc a maximum hole of 70mm can be made. Up to 5 holes per linier metre, no closer together than 50mm and 50mm away from the copper edge.
- Please note exact positions of heating fleece if holes are to be made after plastered into ceiling to avoid damage to the copper edges

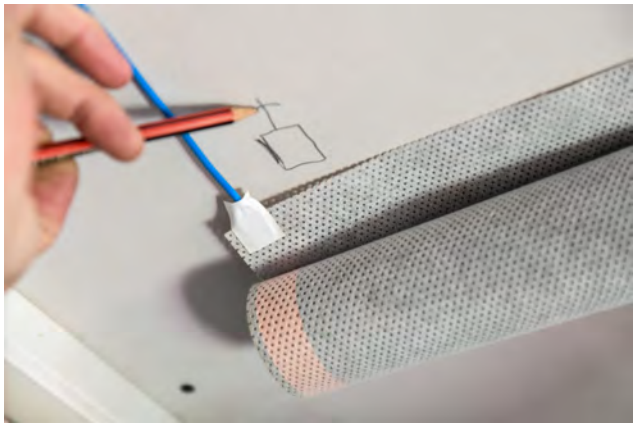
PLASTERER/DRY-LINERS

- Ensure all plasterboard joins have been scrim taped before work commences.

Mark out the room for the placement of each heating panel, ensuring each panel is no closer than 50mm
Any changes to heating fleece placement must be noted on the placement plans to avoid any accidental damage to the heating fleece after installation.

Note the distance between the connection wires to mark on plasterboard/ ceiling to pull through the cables.

For cable runs through ceiling , drill through plasterboard at 45+ degrees to ensure connection tab and cable



Mark ceiling with approx 1" sq where heat panel connection tabs will meet the ceiling, Cut small, shallow square in to

If cables are run across surface mark and

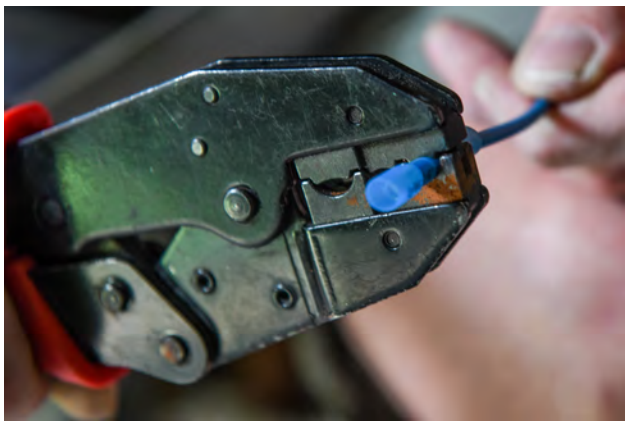
The finished channels and holes should allow connections etc to be flush with the ceiling

READY TO INSTALL HEATING PANELS

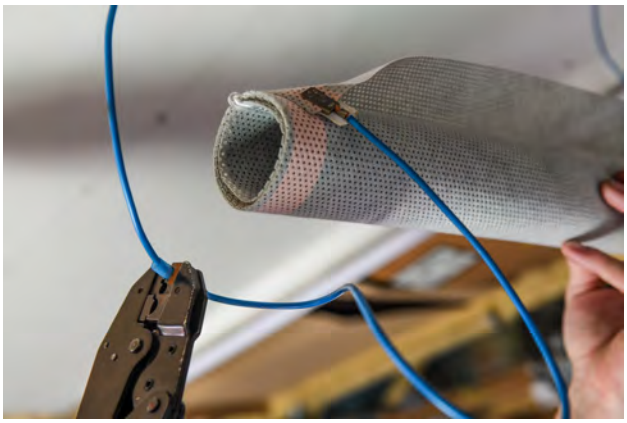
Before connecting the heat panel wires take note which way the panel unrolls, copper strips to be against the ceiling surface as shown above. The heating panel will then roll out flat against the surface.

Keep the retaining clip in place until plastering commences

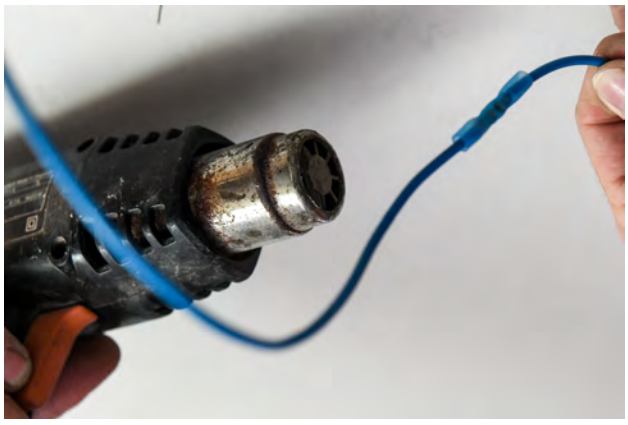
To connect the heat panels strip the cables with a good quality cable stripper and then



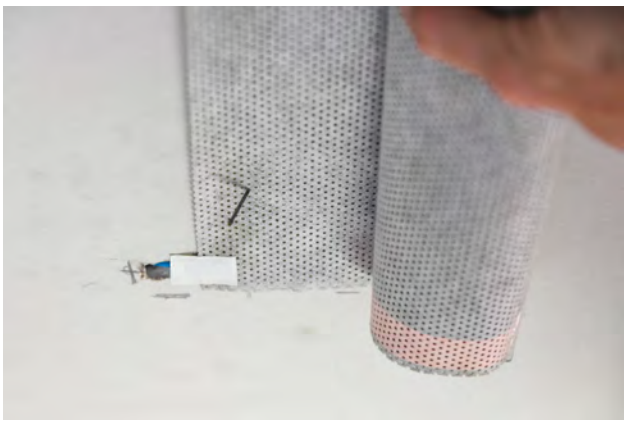
Crimp the butt connector in correct place and check that it has made a mechanical connection by gently pulling on the connector.



Repeat the crimping process to the cables on the fleece.



Gently heat the butt connector with a heat gun (not an open flame) to ensure



The position of the rolled up heat panel can be kept in place by using 4 x panel/ map pin pushed into the surface at a 45+ degrees angle to prevent the panel moving when plastering begins. AVOID THE COPPER EDGES ON THE FLEECE

PLASTERING

- Check for any damage to the heating fleece before you commence work.
- When installing the heat panels you can use, plasterboard adhesive or a wet mix of multi- finish plaster
- Skim ceiling USING A NYLON PLASTERING TROWEL where heat panels are to be placed, one at a time.

Unclip the plastic retainers

start to unroll the heat panel approx 12-18" at a time, using a nylon trowel, firmly start to trowel in the direction of the material roll

The plaster will start to come through the fleece and seal the fleece into the plaster, continue plastering until a smooth finish is achieved before starting the next heating fleece placement

see video link at the end of this manual

If using a plasterboard adhesive this must be dry before the final plastering finish can be applied. If using a wet mix of multi-finish the second final plaster coat

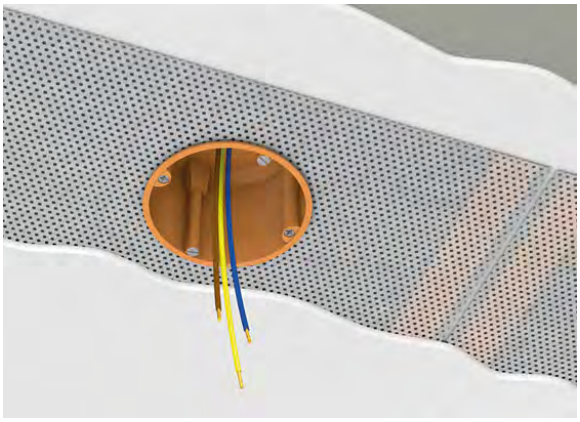
THINGS TO AVOID OR NOTE

- If using multi finish plaster to adhere the heating fleece its needs to be a wetter mix
- Always roll out in short strips DO NOT ROLL OUT FLEECE COMPLETLY
- The placement of the panel pins should face away from the direction you roll out the fleece to ensure the fleece locks into position.
- Follow the following link to view a video tutorial demonstrating the plastering technique
  https://youtu.be/9DfcRLFEPkQ
- Cable should be 2.5mm twin core multi strand. For runs over 10m this should be 6mm. Multi-strand cable needs to be used.

ELECTRICIAN-SECOND FIX

Work only to commence once all the plaster work had fully dried

Before connection of each heating fleece to the transformer a resistance test needs to be made and logged on to warranty card and signed off.
*If the measured resistance values deviate more than 15% from the output value, damage to the contacts or the heating foil must be expected. In this case you must not put the heating system into operation and a replacement heater panel will need to be installed.



Holes for down lights etc can be no larger than 70mm and a maximum of five holes no

GREAT CARE MUST BE TAKEN NOT CUT THROUGH THE COPPER SIDE STRIPS

TRANSFORMERS

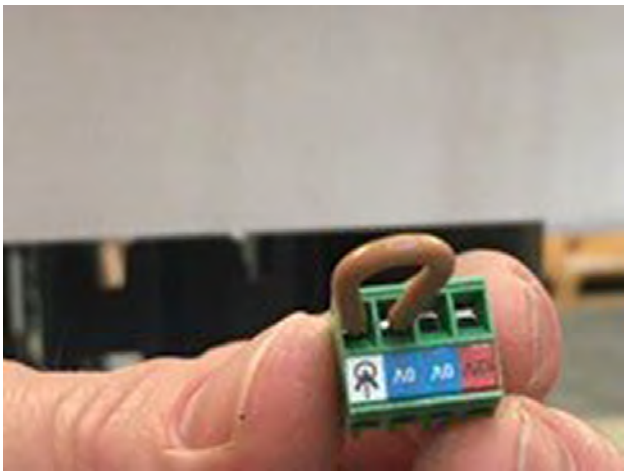
Power Supply HT in flush mounted box

Power supply Basic

Power Supply HT in surface mounted box

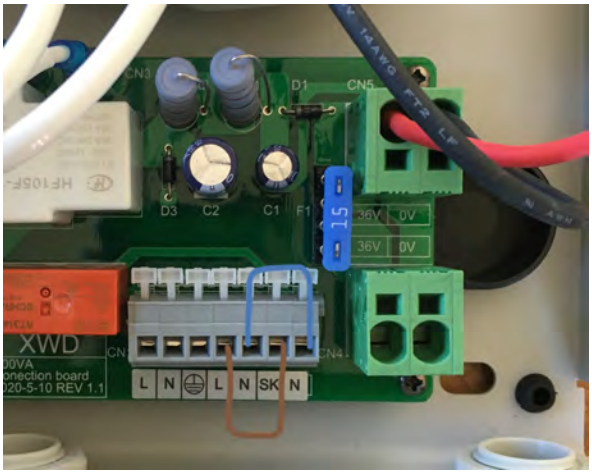
Each connection on the transformer is a maximum of 400w, a maximum of 6 metres of the 110w fleece and a maximum of 3 metres if using the 220w fleece per outlet.

If there is no thermostat installed but you wish to test the system then a link/jump should be used as below



12v signal

To switch on the transformer you have to connect the arrow and 0V with a cable "Bridge". From the arrow comes approx. 12V and when it is connected to the 0V the transformer starts. If you use a room thermostat which is operating with 230V you have to use a potential-Free relay



230v signal

The thermostat outlet on the transformer can be jumped if no thermostat is present to check the system. If using a 12v thermostat on a transformer that gives a 230v signal a relay must be used.

Relay for 12v:230v connection

NOTES

Click here for video instruction of plastering technique https://youtu.be/9DfcRLFEPkQ