

CONFORT-RAY
RADIANT HEATING

STEP-BY-STEP
INSTALLATION GUIDE



**READ CAREFULLY BEFORE STARTING
THE INSTALLATION PROCESS**

DESCRIPTION:

The electric heating panels are made of glass fibre reinforced concrete (GFRC). They can be quickly and easily installed by simply following the steps enumerated here. The same radiant heating system for ceilings can also be installed to heat floors.

The manufacturer or one of his representatives must do a heat loss calculation beforehand, in order to determine the wattage to be installed in each room, and as such validate the guarantee. A master electrician has to do the installation. Please contact your CONFORT-RAY representative for an installer located near you.

STEP 1—INSULATION

- Any type of insulating material can be used with the exception of cellulose.
- The insulating material must be in contact with the heating panels.

A minimum of R-31 for exterior ceilings
A minimum of R-12 for interior ceilings
A minimum of R-12 for floors
A minimum of R-30 for crawl spaces

STEP 2—SPACING OF STRAPPING

The strapping must be 16 inches apart, measured on centre.

STEP 3—STRAP INSTALLATION



The hanger straps are installed perpendicularly to the strapping at 2 to 3 feet intervals. To reinforce the entire structure, additional hanger straps should also be fixed at about 6 inches from the edge of each panel.

STEP 4 – PANEL INSTALLATION



Simply slide the panels between the strapping above the straps while making sure that the outside perimeter of each piece is completely covered.

STEP 5 – PANEL WIRING AND CONNECTING

The wiring between the thermostat and the CONFORT-RAY panels has to be type 12-2 AWG in copper without metallic plating. As shown in the photo, the supply circuit is supposed to pass above the strapping. A minimum of 2 inches of insulation is required between the panels and any supply wire.



The supply wire of the non-metallic 12-2AWG cable is connected to the panel wire through an electrical connector. Once the connection is made, an end cap needs to be used and filled with wood filler.

FIGURE #1

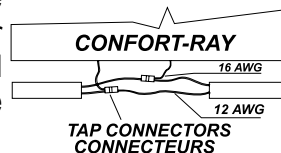
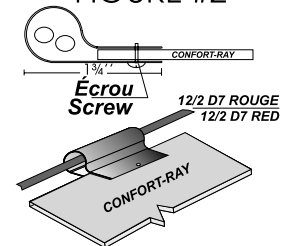


FIGURE #2



MATERIAL USED FOR COVERING:

- Drywall panels – ½ inch thick (R 0.45, RSI 0.078)
- Drywall panels – 5/8 inch thick (R 0.56, RSI 0.098)
- Drywall panels – ½ inch thick with a ¼ inch thick sheet of plywood (R 0.76, RSI 0.13)



- While the ceiling is being installed or painted the heating panels have to be switched off.
- The use of cellulose insulation is inadvisable.
- Never install heating panels above a crawl space unless the floor of the room is adequately insulated.
- CONFORT-RAY panels should not be placed above wooden joists, partitions, cupboards or other obstructions.
- The basement ceiling has to be insulated in order for the heated ceiling system to function properly.

INSTALLATION OF UNDERFLOOR CONFORT-RAY PANELS:

1. You need to keep 2 inches of free space between the heating panels and the bottom of the floor.
2. Install mounting brackets on each side of the joists at a 2 1/2 inch distance from the base of the floor.
3. Slide the heating panels onto the mounting rails.
4. Refer to step 5 to connect the panels.
5. Connect the panels to a #DF9991 thermostat of which the sensor will be inserted into the free space.
6. Install R-12 insulation directly under the heating panels and make sure it reaches all the way to the base of the floor to avoid leakage of warm air elsewhere in the room.



INSPECTION BEFORE INSTALLING DRYWALL:

Each panel has been factory inspected and tested to guarantee good working order before shipping.

Once the system of heating panels is installed, the circuit has to be checked to make sure that the electric work was properly done. If there is no electric current accessible at the time of inspection, it is recommended that the inspection be carried out with an ohmmeter at the circuit's point of entry. To verify the results please use the following formula:

$$\frac{\text{Voltage} \times \text{Voltage}}{\text{Wattage}} = \text{Resistance in ohms}$$

Example : 6 panels of 215 watts each at 240 volts

$$\frac{240 \times 240}{1290} = 44.6 \text{ ohms}$$

When the panels are switched on you can use an ammeter and refer to the values calculated with your representative using the following formula:

$$\text{Total wattage} \div \text{voltage} = \text{amperage}$$

Example : 6 panels of 215 watts each

$$1290 \text{ watts total} \div 240 \text{ volts} = 5.2 \text{ amps}$$

If the values do not match, the installation should be examined. You can touch the panels one by one; if they're warm the system is functioning.

WARNINGS :

- The installation must be in accordance with the Canadian Electrical Code and with the regulations in force.
- Do not install heating panels less than 8 inches (20 cm) away from an electrical outlet, a light or any other heat producing equipment.
- Avoid the use of oil paint to paint heating ceilings.

**Technical Information
Confort-Ray Panel**

Panel fabrication	Structure: Cement and fibre glass composite Heating element: Copper and nickel alloy
Dimensions	Width: 12 inches (30 cm) Thickness: ¼ inch (0.6 cm) Length: Between 108 inches and 36 inches (274 cm and 91 cm)
Voltage	240 volts
Power	21 watts per linear foot
Connection	Thermostat c/w sensor probe or Thermostat c/w sensor probe and room temperature
Qualification	CSA C.22.2 No. 46-M1988 (R1996)

**CHART OF AVAILABLE MODELS
240 VOLTS**

CONFORT-RAY		
MODEL #	SIZE	WATTAGE
96P175	96 po X 12 po	175
84P150	84 po X 12 po	150
72P130	72 po X 12 po	130
60P105	60 po X 12 po	105
48P85	48 po X 12 po	85
36P70	36 po X 12 po	70
CP6 3M567 ST1	End cap 3M connector for #12 wire Hanger straps of 1 inch/50 foot roll	

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WE HAVE THE SOLUTION**

FLOOR HEATING CABLES

COMFORT AT YOUR FEET: A HEATING SYSTEM THAT CAN BE INSTALLED DIRECTLY UNDER ANY TILE OR CERAMIC COVERING.

PRE-FABRICATED GLASS FIBRE REINFORCED CONCRETE (GFRC) ELECTRIC HEATING MODULES

TO MELT SNOW AND PREVENT THE ACCUMULATION OF ICE.

HEATING PANELS FOR CEILINGS

COMFORTABLE HEATING THAT CAN BE INSTALLED IN THE CEILING AND UNDER AN EXISTING FLOOR.

ELECTRONIC THERMOSTATS

ALL MODELS ARE POWERED BY DUAL VOLTAGE (120V OR 240 V) AND HAVE AN INCLINED DISPLAY FOR EASY VIEWING.

GFRC ARCHITECTURAL PRODUCTS

CLIMBING WALLS, DECORATIVE STONES, CORNICES, ETC.

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LIMITED WARRANTY

This product is warranted to the original purchaser against any defects in material or workmanship for a period of 25 years from date of purchase, if it is installed according to the Step-by-Step Guide and the Canadian Electrical Code and it is used correctly.

The warranty does not cover normal wear or any defect that results or may result from misuse, poor maintenance, installation contrary to the norms or increases in voltage from the electricity distributor.

This warranty is expressly in lieu of all other representations or warranties, expressed, implied or statutory, including, but not limited to, any warranty regarding its use for a particular purpose or against any hidden defect.

The manufacturer specifically is not liable and shall not be liable whatsoever for property damage, personal injury, fines, direct or punitive damages, loss of profit or wages, loss of use of the article, capital costs, costs of replacement products, loss of time or any other damages or claims by whomever for such damages.

Any faulty article has to be sent to the manufacturer with proof of purchase. The purchaser is responsible for all costs involved in uninstalling and reinstalling the article and must pay for transport to the factory in advance. The article will be repaired or replaced free of charge.



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