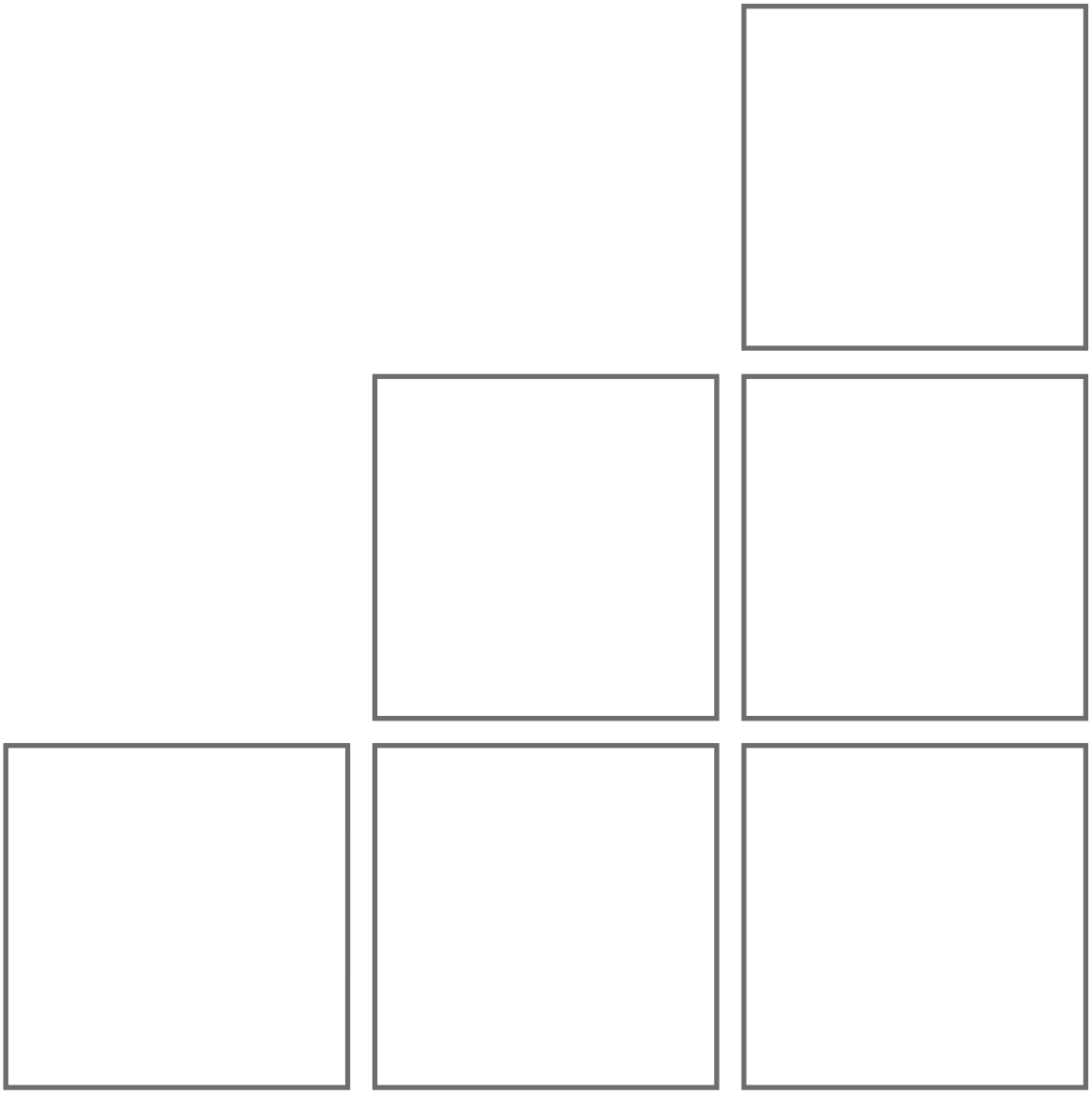
ICO TRADING GROUP INC.

COSYFLOOR INSTALLATION GUIDE



Cable System

Edition 4

installer's tips

DO

- ☑ Check resistance before, during and after installation. (use digital OHM meter)
- ☑ Use heatmat monitor throughout installation.
- ☑ Screw and thin set down cement backer board or CosyBoard as per manufacturer's specifications – visit www.icocanada.com for more information about recommended insulated CosyBoard.
- ☑ Apply reinforcing joint tape at seams. (or follow manufacturer's recommendations)
- ☑ Ensure floor surface is dust free.
- ☑ Install finished flooring as soon as possible after heating system is installed.
- ☑ Install & provide power in accordance with your local electrical codes and standards.
- ☑ Register your heating system to retain your lifetime warranty.
- ☑ Ensure the cable is completely encapsulated in thinset mortar or self-leveling cement prior to installing flooring.

DON'T

- ☒ Forget to install heat sensor wire included with thermostat.
- ☒ Install heating cables closer than 6" to toilet flange.
- ☒ Scrape, sand, or sever wires in any way.
- ☒ Bang trowel or other sharp object on floor.
- ☒ Install cables closer than 2" to each other.
- ☒ Cross cables, thermostat sensor, or power lead.
- ☒ Use knife to clean grout lines.
- ☒ Open splices, cut or modify cable in any way.

TRADING GROUP INC.

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contents & quick guide

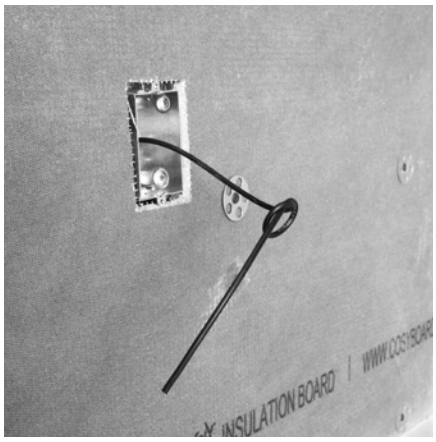
cosyfloor cable system installation guide

1. ELECTRICAL ROUGH-IN

watchpoint

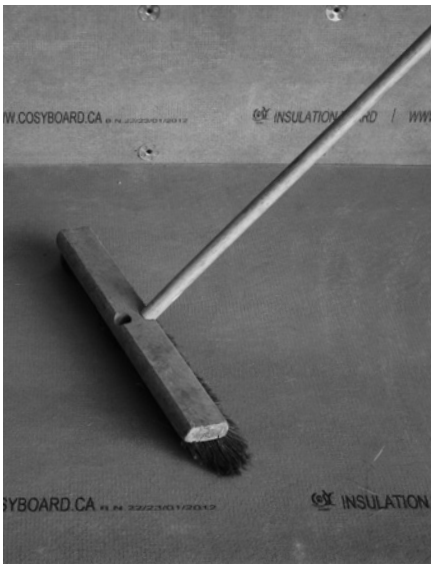
The installation must be performed in accordance with all National and Local Building & Electrical Codes and any local amendments. Turn off the electrical supply to avoid risk of electric shock.

1. Install a suitable power supply to a single gang box at the desired location for thermostat. (110V for areas up to 110 sq ft or 220V power for larger heated areas)
2. Run a conduit from the electrical box down to subfloor & leave a pull wire inside conduit. (some areas require a separate conduit for thermostat sensor wire-check local codes)



2. SUBFLOOR PREPARATION

1. Ensure that suitable backer board is fastened down as per manufacturers specifications.
2. Ensure that the subfloor does not have flex or movement.
3. Apply reinforcing joint tape at seams. (or treat seams per manufacturer's specifications)
4. Ensure subfloor is dust free.



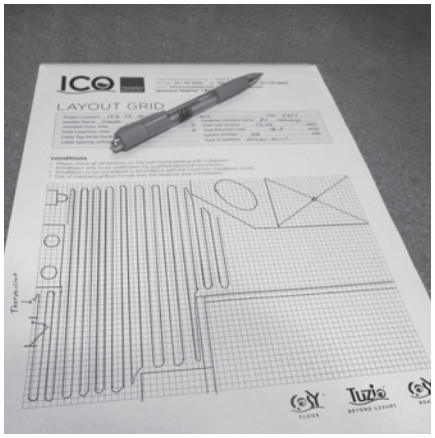
installer's tips

- Prime backer board with self-leveling primer. (if that is the method to be used for covering heating cables)
- Use silicone caulking to seal any gaps around perimeter of the room. This will prevent self leveling concrete from escaping. 2" masking tape also works well. Use masking tape to build dams at floor vents, doorways, or any other areas of loss.
- Document all phases of installation with pictures.

DO NOT CUT OR SHORTEN YELLOW HEATING CABLE

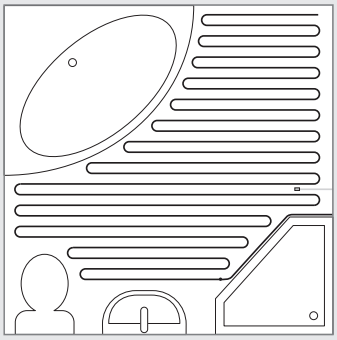
3. SIZING GUIDE

1. Measure floor area to be heated & determine square footage of heating cable needed. Order the correct size. Do not install heating cables under any fixed furniture. (eg: vanity units)
2. Be sure to leave area close to toilet flange free of heating cables (6" radius). It is recommended that heating cables are installed 4" away from all walls.
3. Pay close attention to heating high traffic areas (in front of shower, tub, toilet room, vanity) and leave areas close to walls, & behind doors unheated if needed.
4. Standard spacing of 3" is recommended for most areas. For larger rooms (living rooms etc) the cable spacing can be increased to 4" but is not recommended for high traffic areas. For high heat loss areas, use cable spacing of 2". (floors over unheated crawl spaces or non-insulated concrete slabs)



4. LAYOUT DRAWING

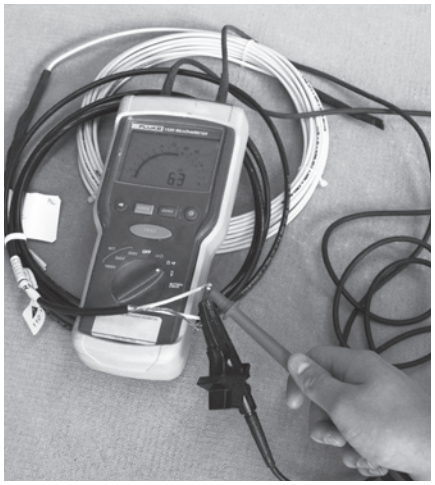
1. The yellow heating cable must **NEVER** cross at any point—this includes the thermostat sensor probe wire.
2. The simplest way is to run the cable the length of the room with the fixing strips fastened across the width of the room.
3. Make sure the thermostat floor sensor is able to be installed midway between 2 heating cables without crossing them.



5. RESISTANCE TEST **(before installation)**

watchpoint

Circuit fault detector provided should be used as well as ohm meter, not instead of.



1. Using a digital OHM meter, measure the resistance between the power leads (insulated wires). This reading should be within 10% of the OHM reading on the cable tag.

   This number can be calculated by the following formula:
   Factory cable tag reading (F) X .9 and (F) X 1.1
   The OHM reading should be between these 2 numbers. Example: Factory cable tag reading of 17.3. The allowable OHM range for this heatmat would be: 17.3 X .9 = 15.57 and 17.3 X 1.1 = 19.03 This mat will need to read between 15.57 and 19.03 throughout the installation process.
2. Using the digital OHM meter, measure the resistance between the Ground (un-insulated) cable and each of the power (insulated) leads. This should have no reading or .OL (open load). If you have an OHM reading at this point **STOP AND DO NOT CONTINUE WITH INSTALLATION**.
3. Measure OHM reading for thermostat floor sensor & ensure this reading is within the guidelines stated on the floor sensor cable tag.
4. Record these readings along with Cable serial number, date and factory readings on the warranty application included with the installation manual.

****DO NOT CUT OR SHORTEN YELLOW HEATING CABLE****

6. CABLE INSTALLATION

1. Check that you have received heating cable, fixing strips, tape, heatmat monitor, thermostat and floor sensor.
2. Using pull wire provided in conduit, feed the black cable leads up into the electrical junction box.
3. Leave all cable tags on cable and ensure they remain in electrical junction box.
4. Connect provided heatmat moniter to cable lead ends.
5. Chisel a channel in subfloor to recess the cold lead and heating cable splice.
6. Screw fixing strips at both ends of the room where the cables will be fastened. (if installing over concrete, use a spray contact-cement type glue to fasten fixing strips)
7. Install additional fixing strips at 5' foot intervals between the 2 ends of the room.
8. For curved walls, cut the fixing strips as needed and install with additional nails or screws.
9. Ensure the black cable lead (coming from conduit) is firmly fastened to the subfloor.
10. **NEVER ALLOW YELLOW HEATING CABLE TO GO UP WALL OR INTO CONDUIT**.
11. Starting at one end of the room, string the heating wires between the fixing strips clipping them in every 3". (or appropriate distance from 2-4")
12. Use provided tape to hold wires to floor as needed between rows of fixing strips.

installer's tips

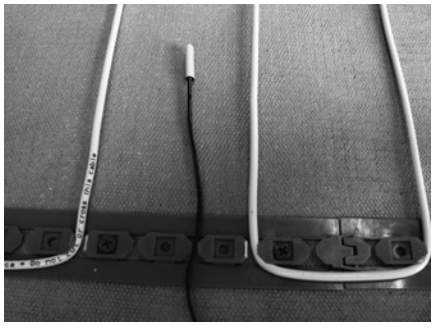
- **NEVER** use nails or cable fasteners to hold wires in place
- In case of too much cable, simply reduce the cable spacing to no closer than 2" for several lengths. For too little cable, simply increase the cable spacing to no more than 4" for several lengths. (ensure these spacing variations are not in vicinity of heat sensor probe)

7. FLOOR SENSOR INSTALLATION

1. Position end of sensor probe in the exact center between 2 heating cables.
2. Fasten floor sensor with tape provided as needed.
3. Feed floor sensor wire up wall to thermostat location.

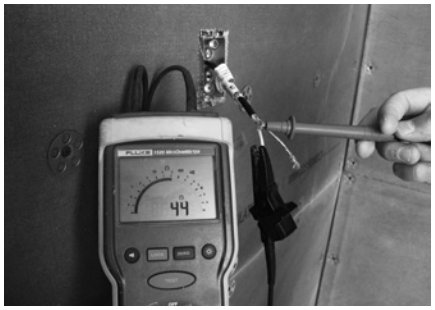
installer's tips

Ensure the sensor probe will not be in an area covered by a bath mat or area rug-these will trap the heat & give a false reading, causing the heating system to shut off prematurely.



8. RESISTANCE TEST **(during installation)**

1. Using a digital OHM meter, measure the resistance between the power leads. (insulated wires) This reading should be within 10% of the OHM reading on the cable tag.
2. Using the digital OHM meter, measure the resistance between the Ground (un-insulated) cable and each of the power (insulated) leads. This should have no reading or .OL. (open load) If you have an OHM reading at this point **STOP AND DO NOT CONTINUE WITH INSTALLATION.**
3. Measure OHM reading for thermostat floor sensor & ensure this reading is within the guidelines stated on the floor sensor cable tag.
4. Record these readings along with cable serial number, date and factory readings on the warranty card included with the installation manual.



DO NOT CUT OR SHORTEN YELLOW HEATING CABLE

9. FLOOR FINISH

1. Cover floor and heating cables with thinset mortar or self-leveling concrete compound in accordance with manufacturer's instructions.
2. Keep foot traffic & general construction to a minimum until tile flooring is installed.
3. Install new flooring using caution: don't drop flooring material, trowel, or scrape floor.
4. Ensure other personell are aware of the in floor heating system. (mark wall at conduit location "no nails", make sure plumbers don't need to drill any holes etc)

installer's tips

- **DO NOT** use a knife to clean grout lines.
- **DO NOT** have floor heat on during floor install.

10. RESISTANCE TEST **(after installation)**

1. Using a digital OHM meter, measure the resistance between the power leads. (insulated wires) This reading should be within 10% of the OHM reading on the cable tag.
2. Using the digital OHM meter, measure the resistance between the Ground (un-insulated) cable and each of the power (insulated) leads. This should have no reading or .OL (open load). If you have an OHM reading at this point **STOP AND DO NOT CONTINUE WITH INSTALLATION.**
3. Measure OHM reading for thermostat floor sensor & ensure this reading is within the guidelines stated on the floor sensor cable tag.
4. Record these readings along with cable serial number, date and factory readings on the warranty card included with the installation manual. Submit completed warranty form to ICO for warranty registration.

11. ELECTRICAL CONNECTIONS

watchpoint

The installation must be performed in accordance with all National and Local Building & Electrical Codes and any local amendments. Turn off the electrical supply to avoid risk of electric shock.

Perform electrical connections in accordance with the thermostat installation guide provided.

DO NOT CUT OR SHORTEN YELLOW HEATING CABLE

CUSTOMER HANDOVER

Once the installation is complete, provide homeowner with the CosyFloor Installation Guide Envelope containing:

1. This installation Guide
2. Thermostat Programming Instructions
3. Copy of Completed Warranty Form
4. Layout Drawing

TROUBLESHOOTING

Thermostat does not switch on	1. Ensure thermostat is switched to the “ON” position.
	2. Check there is power to the thermostat, and the circuit breaker is switched on.
	3. Ensure voltage between heatmat, thermostat and circuit breaker is the same. (either 110V or 220V)
Thermostat screen is blank	1. Ensure thermostat is switched to the “ON” position
	2. Check there is power to the thermostat, and the circuit breaker is switched on.
Heatmat resistance does not correspond with measurement on CosyFloor factory test certificate	1. Make sure your multi-meter is set to the correct OHM setting.
	2. Ensure fingers are not touching the probes, as this will affect the resistance reading.
Heatmat is not heating up, and thermostat display says “GFI”	1. Check thermostat connections.
	2. Ensure ground conductor from heatmat is connected to ground, not to thermostat.
	3. Perform GFI test as outlined in thermostat instructions.
Heatmat is not heating up, and thermostat display says “ER”	1. Check floor sensor is connected to correct terminals on thermostat.
	2. Check there is no damage to floor sensor.
	3. If floor sensor is not installed, and the thermostat floor sensing mode is not being used, move switch on back of thermostat face to “AF” position.

WARRANTY INFORMATION

ICO’s warranty covers the following:

- Thermostats are covered by a 3 year warranty.
- Heating cables are covered by a limited lifetime warranty.

It should be noted that in-floor heating guarantees are only entertained if the warranty application form is returned within 60 days of the floor installation. Lifetime warranty for CosyFloor products is only applicable for the original purchaser.

For any warranty questions call: **1-877-757-8930** or email to: **info@icocanada.com**

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