



**COSY**<sup>®</sup>  
FLOOR

# INSTALLATION GUIDE

Mat System



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*With Warm Wishes*

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# installer's tips

## DO

- ☑ Check resistance before, during and after installation. (use digital OHM meter)
- ☑ Use circuit fault detector throughout installation.
- ☑ Screw and thin set down cement backer board as per manufacturer's specifications
- ☑ 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 at [www.icobath.com/cosyfloor-warranty](http://www.icobath.com/cosyfloor-warranty) to retain your lifetime warranty.
- ☑ Ensure the mat 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.

# cosyfloor mat system installation guide

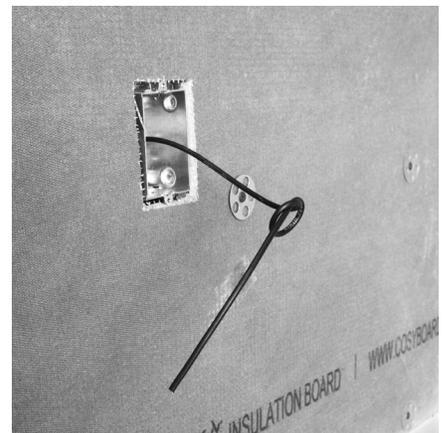


## 1. ELECTRICAL ROUGH-IN

### ! 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. Ensure subfloor is dust free.

### 💡 installer's tips

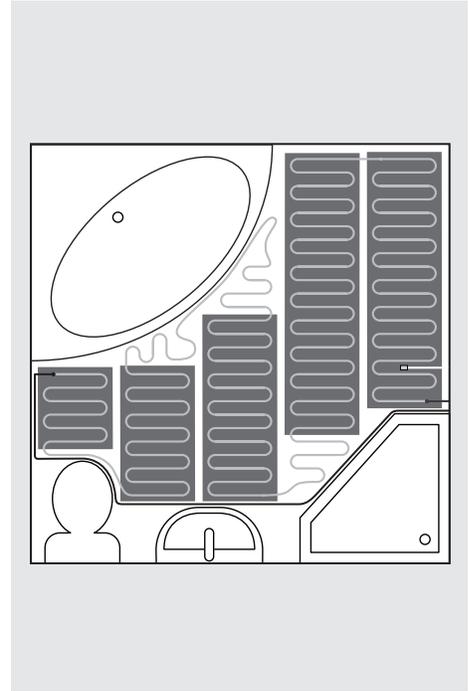
Prime backer board with self-leveling primer. (if that is the method to be used for covering heatmat)



# 3. SIZING GUIDE

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1. Measure floor area to be heated & determine square footage of heatmat needed. Order the correct size. Do not install heatmat under any fixed furniture. (eg: vanity units)
2. Be sure to leave area close to toilet flange free of heating cables (6" radius).
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. LAYOUT DRAWING

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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 heatmat the length of the room. Check the room width in multiples of 20". For example, if a room is 64" wide, you will have room for 3 runs of heatmat with 2" at either wall.
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)

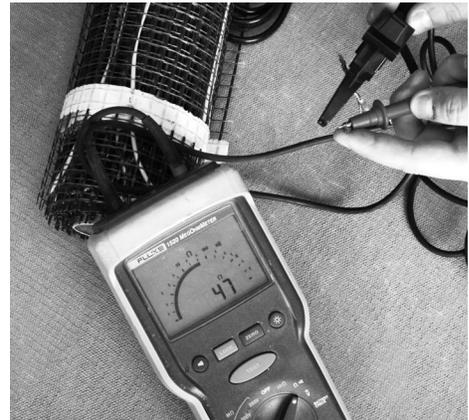
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1. Using a digital OHM meter, measure the resistance between the power leads (insulated wires). This reading should be within 5% of the OHM reading on the cable tag.  

This number can be calculated by the following formula:  
Factory cable tag reading (F) X .95 and (F) X 1.05  
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 .95 = 16.4 and 17.3 X 1.05 = 18.1 This mat will need to read between 16.4 and 18.1 throughout the installation process.

**NOTE: All measurements will need to be recorded and submitted to [www.icobath.com/cosyfloor-warranty](http://www.icobath.com/cosyfloor-warranty)**

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 heatmat serial number, date and factory readings on the warranty application at [www.icobath.com/cosyfloor-warranty](http://www.icobath.com/cosyfloor-warranty).



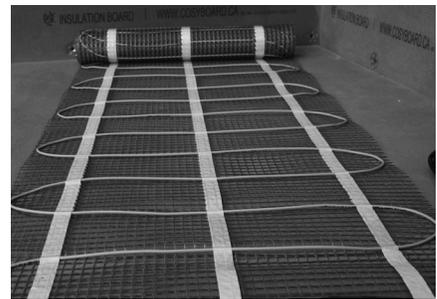
## 6. HEATMAT INSTALLATION



### installer's tips

1. Check that you have received heatmat, fixing strips, tape, circuit fault detector, 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 lead and ensure they remain in electrical junction box.
4. Connect provided circuit fault detector to cable lead ends.
5. Chisel a channel in subfloor to recess the cold lead and heating cable splice.
6. Starting at one side of the room, roll out the heatmat. When needed, simply cut the blue mesh only, turn the heatmat 180 degrees and continue rolling down the length of the room. The heating cables should never be closer than 2".
7. When fitting around irregular shapes, simply remove mesh from the heating cables and secure the heating cables to sub floor with tape. Take care not to damage the heatmat while removing cables. Ensure that the cables do not cross & the spacing is not closer than 2".
8. Ensure the black cable lead (coming from conduit) is firmly fastened to the subfloor.
9. NEVER ALLOW YELLOW HEATING CABLE TO GO UP WALL OR INTO CONDUIT.

- NEVER use nails or cable fasteners to hold wires in place
- 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.



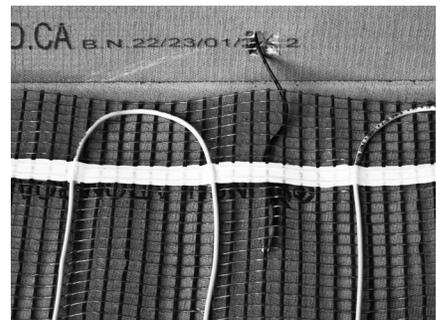
## 7. FLOOR SENSOR INSTALLATION

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 bathmat 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 5% of the OHM reading on the cable tag. Use formula in section 5 "Resistance test".
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. Again, use same formula as in steps 5 & 8.
4. Record these readings along with heatmat serial number, date and factory readings on the warranty application at [www.icobath.com/cosyfloor-warranty](http://www.icobath.com/cosyfloor-warranty).



## 9. FLOOR FINISH

1. Cover floor and heatmat 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 personnel 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 5% 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 heatmat serial number, date and factory readings on the warranty application at [www.icobath.com/cosyfloor-warranty](http://www.icobath.com/cosyfloor-warranty). 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.



# CUSTOMER HANDOVER

Once the installation is complete, provide homeowner with the following:

1. This Installation Guide
2. Thermostat Programming Instructions (You will need Distributor ID: 11505 for certain thermostats)
3. Copy of email confirmation showing that the warranty application has been submitted.

# TROUBLESHOOTING

Thermostat does not switch on	<ol style="list-style-type: none"> <li>1. Ensure thermostat is switched to the “ON” position.</li> <li>2. Check there is power to the thermostat, and the circuit breaker is switched on.</li> <li>3. Ensure voltage between heatmat, thermostat and circuit breaker is the same. (either 110V or 220V)</li> </ol>
Thermostat screen is blank	<ol style="list-style-type: none"> <li>1. Ensure thermostat is switched to the “ON” position</li> <li>2. Check there is power to the thermostat, and the circuit breaker is switched on.</li> </ol>
Heatmat resistance does not correspond with measurement on CosyFloor factory test certificate	<ol style="list-style-type: none"> <li>1. Make sure your multi-meter is set to the correct OHM setting.</li> <li>2. Ensure fingers are not touching the probes, as this will affect the resistance reading.</li> </ol>
Heatmat is not heating up, and thermostat display says “GFI”	<ol style="list-style-type: none"> <li>1. Check thermostat connections.</li> <li>2. Ensure ground conductor from heatmat is connected to ground, not to thermostat.</li> <li>3. Perform GFI test as outlined in thermostat instructions.</li> </ol>
Heatmat is not heating up, and thermostat display says “ER”	<ol style="list-style-type: none"> <li>1. Check floor sensor is connected to correct terminals on thermostat.</li> <li>2. Check there is no damage to floor sensor.</li> <li>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.</li> </ol>

# WARRANTY INFORMATION

ICO's warranty covers the following:

- Thermostats are covered by a 2-year warranty.
- Heatmat is covered by a limited lifetime warranty.

It should be noted that in-floor heating guarantees are only entertained if the warranty application form is submitted to [www.icobath.com/cosyfloor-warranty](http://www.icobath.com/cosyfloor-warranty) 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: [cs@icobath.com](mailto:cs@icobath.com)



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