Installation Guide

3.7W heating cable

for floor heating system with cable guides or for uncoupling membrane

WARMALL TM/MD

1 855 396 5600 • buywarmall.com • info@buywarmall.com

General information

This guide explains how to install the 3.7CWC & the 3,7GCWC cables with an uncoupling membrane or plastic cable guides (how to prepare the installation and install the cable in the membrane or the cable guides). It is important to read and understand this guide, the thermostat guide, Warranty and Test log sheet before installing. For more information, contact **Warrmall.**

IMPORTANT:

This cable is CSA certified for Canada and the United States. It is to be installed in most Uncoupling Membrane available on the market. These membranes hold the cable in slots well adapted to the dimensions of the cable.

Contact WarmAll to validate the cable's compliance with the membrane.

General Information

The safety and reliability of any floor heating system depends on the design, planning, installation and testing. All instructions contained in this guide are important.

The heating cable system is designed for under floor heating purposes only. This system must only be installed by certified professionals who are familiar with the sizing, installation, construction and operation of a floor heating system while being aware of the risks involved. The installation must comply with all national and local electrical codes in force.

This floor heating system can be used as a primary heating source. The heat loss attributed to the room must be less than the heat output given by the heating system. The thermostat can either be programmed to operate with the floor sensor or the ambient air temperature. Refer to the thermostat instructions guide for more information.

This product must be installed by a qualified person in accordance with this installation manual and the Electrical Code. Canadian Part 1 (Canada) or the National Electric Code (US) if applicable. All electrical connections must be carried out by a qualified electrician, according to the electrical and construction codes in force in your area.

This system is certified for dry or humid (shower) environments. This floor system heating is an electrical product and must be installed in accordance with the regulations in force according to the Canadian and/or U. S. electrical code depending on the country, state or province in which the system operates will be installed.

Refer to the national, regional or municipal electrical code according to the regulations in force. This system must be installed by a professional familiar with the installation procedures, operation, measurement of the system and the risks associated with the installation according to the laws in force in your area. You must also follow the recommendations and building code requirements in the area where the system will be installed. NTCA and CTDA

CAUTION: RISK OF ELECTRIC SHOCK OR FIRE
If the underfloor heating system is not installed in accordance with the instructions or if the cable is damaged, there is a risk of electric shock or fire.

General information

25-year limited Cable Warranty and 2 years on thermostat

WarmAll warrants the heating cable for a period of 25 years and the thermostats (Mysa, Warmup and OJ Electronics) for a period of 2 years. This Limited Warranty will only be valid if the installer has followed the approved installation guides of the cable & thermostat, has completed all the approved installation procedures, conducted all the cable conductivity / resistivity test, complete the Test Log Sheet and has complete and sent to WarmAll the warranty card. See **WarmAll**'s warranty for details.

Safety and Warnings / Important Information

- If the cable system is damaged, it must be replaced. Do not attempt to connect or repair part of the system;
- The heating cable must be at least 6"(15cm) away from any heat source;
- Install the cable if the temperature is above 40° Fahrenheit or 5° Celsius;
- If you are using the cable with plastic cable guides, the approved spacing are 3, 4 and 5 inches, 4 inches being the standard;
- If you are using a membrane (DrexMat, Prodeso-Heat, MAPEI, Ditra-Heat, Warmup, Prova-Heat, Laticrete, Nuheat), the spacing approved are: 2 and 3 alternating spacing between slots, 3 slot spacing, 3 and 4 alternating spacing between slots, 4 slot spacings. 3 slot spacing is standard;
- If you use Flextherm's Flexnap-XL membrane, the gap is at the 3-cell spacing;
- Never power the cable if it is on the spool;
- The cable must have a grounding system;
- Never install a cable designed for a 120V power source on a 240/208V power source;
- The system should not be installed under stationary furniture where air is not circulating;
- The cable must never be installed over an expansion joint;
- Do not install this product if the cable seal has been broken;
- The cable system must not extend beyond the room or area in which it is initially installed;
- The cable must be installed at least 2" from the base of a countertop;
- The cable must be installed at least 2" from any wall;
- The cable must be installed at least 6" from any type of drain;
- The cable cannot be overlapped, cut or modified;
- The entire heating part of the cable (including the connection) must be fastened to the floor and covered with thinset cement or self-leveller;
- The heating cable must never be installed in/on walls;
- The cable must never be submerged;
- The subfloor must meet or exceed the C.N.B. requirements or any other regulations in your area. Refer to the membrane manufacturer or the Tile Council of Canada North America.

IMPORTANT
Perform ail initial cable tests checks without unsealing the cable.
If all the tests prove successful, follow the installation guide.

General information

IMPORTANT:

It is important to contact the floor covering manufacturer to meet its installation requirements with heating cables. The installer must also comply with the recommendations of any product installed below and above the heating cables.

Flexible floor coverings are prohibited with the Uncoupling Membranes. Use plastic cable guides.

Circuit

This floor heating system must be on a dedicated electrical circuit. The load of our thermostats is 15 amperes on 120 or 240 volts. If the installation requires more than 15 amps, it is possible to add a second thermostat or an expansion units. Additional thermostats or expansion units must also be on a dedicated circuit.

WarmAll Heating Cable System - Cable Specifications

DOUBLE CONDUCTOR	CABLE CONSTRUCTION
Voltage	120V, 240V
Power	3.7W / ft (12.14W / m) ± 10%
Heating element size	40 ft to 800 ft (12.2 to 243.8 m)
Radius of curvature	1 in (25.4 mm)
Cable diameter	1 /4 in (6 mm)
Conductive insulation	fluoropolymer
External insulation	fluoropolymer or TPE or nylon
Max. Ambient temperature	85 ° F (30 ° C)
Installation temperature min.	40 ° F (5 ° C)
Ground wire	2-wire 16 AWG plus ground; 10ft (3) length

Perform a cable resistance & insulation tests without unsealing the cable.
If all tests prove to be correct, follow the installation guide.

General information

Preparing the subfloor

Clean the subfloor thoroughly. Ensure that there are no nails, screws or any other elements which can damage the heating cable when laid on the floor.

Verify that the subfloor structure meets the required standards if using plastic cable guides or an Uncoupling Membrane.

The surface must meet all construction standards relevant to the coating and the use of a floor heating system. Check with the manufacturer for compliance with a floor heating system.

Check that the surface is compatible with the mortar or self-levelling mortar set that will be used during installation.

SELF-LEVELING

Refer to the installation guide for the **DrexMat** uncoupling membrane from WarmAll.

1. It is recommended to level the floor surface before installing the uncoupling membrane.

2. Use a recommended thin-set mortar to fix the uncoupling membrane to the sub-floor (MAPEI LHT or equivalent).

3. Respect the drying time of the thin-set mortar used to fix the membrane to the sub-floor before putting the self-leveling compound on the uncoupling membrane.

4. Only the "Standard" release membrane (white fiber fabrics underneath) is permitted with the use of a self-leveling compound (MAPEI Ultraplan 1 Plus or Novoplan 2 Plus or equivalent).

5. A minimum of 3/8" (inch) is required above the uncoupling membrane for the installation of flexible covering (engineered wood, laminated wood, linoleum).

Sub-floor compatibility with cable

- Plywood;
- Cement panels;
- Concrete slabs;
- Concrete slabs on an existing floor;
- Existing ceramic: consult the manufacturer of the cement or membrane to properly prepare the subfloor;
- Acoustic Membrane: consult the cement or membrane manufacturer to properly prepare the subfloor;
- Uncoupling Membrane: consult membrane, subfloor, cement manufacturers to properly prepare the subfloor;
- Anti-fracture Membrane: consult the cement manufacturer to properly prepare the subfloor correctly.

Floor sensor installation

Planning the installation

The design of the installation must correspond to the requirements of the installation guide. The cables are available in 120 and 240 volts. They cannot be interchanged.

Determine the location of the thermostat on the wall. The thermostat must be accessible, in the room where the cable will be installed and it must be installed at the legal height required by the laws in force in your area.

One floor sensors is located in the thermostat box and a second one in the cable box.

Floor sensor installation

Choose a location to place the thermostat on a wall above the heated zone, where it can be reached by the 10 feet cold lead cable and the floor temperature sensor cables. It is recommended to leave a minimum of 3 inches between the wall and the first heating cable.

IMPORTANT:

First, verify that the cable you received is the cable that you have ordered. Second, verify that it is the right size for your installation. Third, if all the measurements, cable specifications and tests readings are right, than you can break the seal on the cable and start your installation.

Cable and guides system

The floor sensor must be installed directly between two heating cables. Hold the sensor head in place with hot glue or tape. The probe must be installed at least 16 inches (40 cm) inside the heating zone. Do not cross the probe wire on the heating wire. The sensor must be installed away from any other source of heating.

Probe resistance measurement and installation

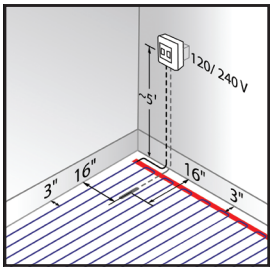
If you are using a thermostat that controls the floor temperature, you must measure its resistance, confirm that the floor sensor has no fault before installing it. The floor sensor can be installed in a conduits or directly on the subfloor.

The floor sensor wire should go from the thermostat to the heating floor. If a conduit is used, it must be partially covered. Make a channel for the conduit of about 5/16" deep by 5/16" wide in the floor from the wall.

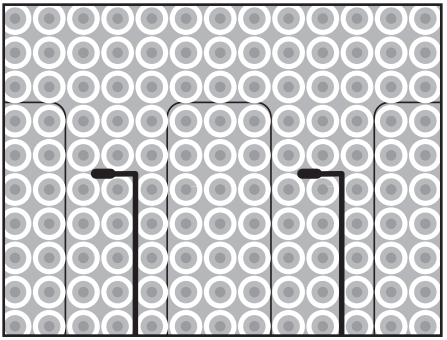
Floor sensor installation

The head part of the floor sensor must be installed directly between 2 wires. Use tape or hot glue to fix the sensor on the floor if your cables are installed with our plastic cable guides.

The floor sensor and/or conduit must never overlap a heating cable



A. Location of the probe in the floor heating system with cable guides



B. Location of the probe in the floor heating system with an uncoupling membrane

Cable and uncoupling membrane system

The floor sensor must be installed directly between two heating cables. Bend the wire and fix the tip of the floor sensor between two canes in the membrane and then pass the wire between the cones all the way to the wall. The floor sensor must be installed to a minimum of 16 inches inside the last heating cable. Do not cross the floor sensor cable with the heating cable. The floor sensor must not be installed near any other heat source other than the heating cable. If the installation requires 2 floor sensors, install the 2nd between two rows of heating cables.

Floor Sensor resistance measurement and installation

Install the floor sensor into the membrane (refer to drawing **B**).

Pass the cable in the wall to the thermostat. It is possible to install conduit to pass the cable inside to protect it. Refer to the floor sensor instruction guide which is with the thermostat instruction guide.

The floor Sensor must be installed at least 16 inches from the walls to the interior of the system heating. It must also be installed directly between two rows of cables. Tape or hot glue can be used to hold the floor sensor in place. One floor sensors is located in the thermostat box and a second one in the cable box.

Installation with an Uncoupling Membrane

Choose a location to place the thermostat on a wall above the heated zone, where it can be reached by the 10 feet cold lead cable and the floor temperature sensor cables. It is recommended to leave a minimum of 3 inches between the wall and the first heating cable.

WARNING

- Before installing the cable in the membrane and connecting the cable to the power supply, the installer must read and understand the uncoupling membranes manufacturer's installation instructions accepted by WarmAll for installation with its cable.
- To install the cable in the membrane, use a non-edged tool.

All heating cable must be installed inside the membrane, on the membrane. No part of the heating cable must be installed directly on the subfloor; including the connections that connects the heating cable to the black cold lead (non-heating) cable.

If the uncoupling membrane manufacturer's installation instructions are not followed, WarmAll's warranty will not be valid.

To access the instruction guides of the following membranes:

- Schluter for Ditra-Heat : www.schluter.ca or www.schluter.com
- Progress Profiles for Prodesso-Heat : www.progressprofiles.com
- Flextherm for Flexnap XL : www.flextherm.com
- Warmup for DCM-PRO : www.warmup.com www.warmup.ca or Latricrete www.laticrete.com
- WarmAll for DrexMat : www.BuyWarmAll.com

Thinset cement and adhesives

Before installing the membrane to the subfloor, installing the cable in the membrane and connecting the cable to the electrical circuit, the installer must read and understand the manufacturer's installation instructions for the thinset cement and/or adhesives accepted by the uncoupling membrane manufacturers. If the manufacturer's installation instructions cement-glue and/or glue are not followed, WarmAll's warranty will be void and not binding.

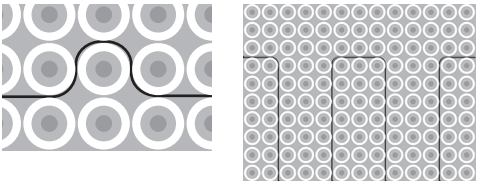
Refer to the following instruction guides:

- Mapei: www.mapei.com
- Proma: www.proma.com
- Flexible: www.flextile.com
- TEC: www.tecspeciality.com
- Schluter. ca or/or schluter.com
- Laticrete: http://laticrete.com
- Colle de ltal-Nord: www.keisel.com
- Ardex: www.ardex.com
- Custom: www.custombuildingproducts.com

Installation with an Uncoupling Membrane

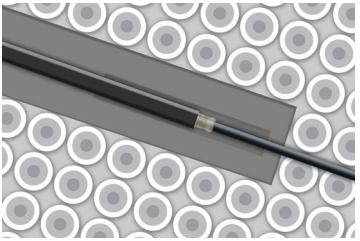
- All heating cable, including the connection connecting the heating cable to the non-heating cable must be installed in the membrane and covered with thinset cement;
- The cable must not be installed under furniture attached to the floor where air cannot circulate: toilet, washbasin, vanity, wardrobe, bath, shower, etc.;
- The cable should never be installed in a wardrobe, wall, cabinet or ceiling;
- The heating cable must never be installed over an expansion joint;
- The minimum installation temperature is 5°C (40°F);
- Approved spacings are: 2 and 3 alternate cone spacing; 3 cone spacing; 3 and 4 alternate cone spacing and 4 cone spacing. Alternately, 3 cone spacings is standard.
- An independent grounded circuit must be installed for each heating cable.
- The maximum straight length for a cable line is 12 ft. (3.6 m). Cable's have to make a detour (U-shaped) around a membrane cone and every 12 feet thereafter. **(See photo 1)**.

Photo 1



The cold joint between the heating and non-heating section of the cable system is bigger in diameter than the membrane slot. To make room, please cut off a piece of the membrane about 1 inch by 12 inch min. Lay the cold joint directly on the sub-floor, within the opening, and fix it with tape or hot glue. **(See photo 2**).

Photo 2



Buffer zones are places where it is not absolutely necessary to heat. Use these areas if you have a slight excess of cable.

If you are short of cable follow our technical information for the different scenarios of spacing. Note that the wider you space the cables, the less heat there will be. The standard spacing is at 3 cones in the membranes.

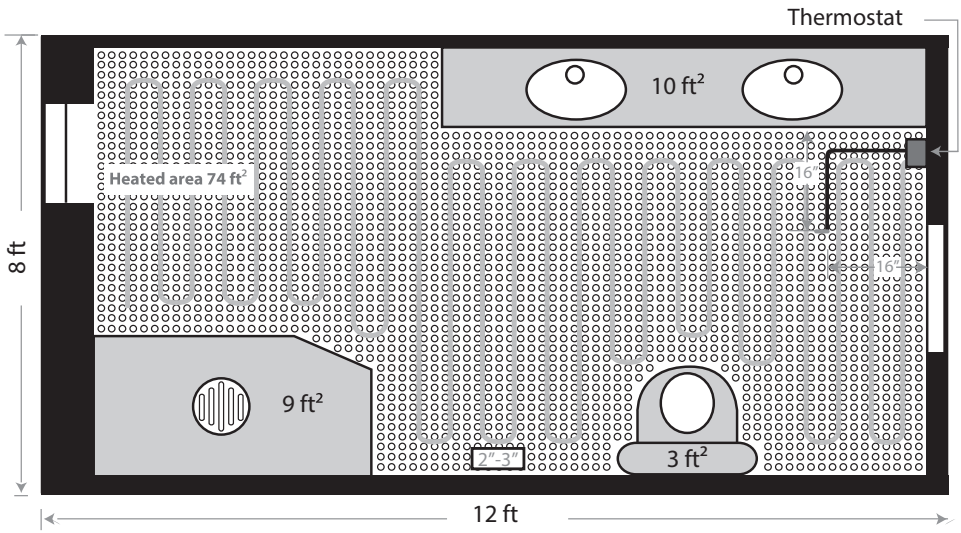
Installation with an Uncoupling Membrane

Installing the cable

After carrying out the first cable resistance and insulation tests and confirming that the reading are good, (note: write the results in the Test Log Sheet) install the connection part of the cable (connecting the heating part to the black non-heating cable) in accordance with the instructions of the membrane manufacturer and run the non-heating cable through the wall to the thermostat. Start installing the cable in the membrane per instructions.

IMPORTANT

Do not cut or shorten the heating cable. Do not expose it to any mechanical stress. Avoid walking on the heating cable. Wear shoes with soft soles.



Example of wire installation on the floor

Total area 96 sq. ft. minus 22 sq. ft. of fixed furniture space equal heated area 74 sq. ft.

Using the specifications and calculation of the total area to be heated, you can choose the appropriate cable size. Define the optimal layout of the floor to be heated using the WarmAll disposition Help Matrix (www.BuyWarmAll.com) to ensure adequate coverage.

Installation with an Uncoupling Membrane

Installation/Technical information

Cable 3.7 Watts 120 Volts

Cable without magnetic field for uncoupling membrane

Model	Length		DREXMAT WARMUP / DITRA-HEAT / PROVA-HEAT / LATICRETE				PRODESO HEAT / MAPEI / NUHEAT				Watt	Amp	Ohms
			Spacing (ft^2)				Spacing (ft^2)						
			2 & 3 Slots	3 Slots	3 & 4 Slots	4 Slots	2 & 3 Slots	3 Slots	3 & 4 Slots	4 Slots			
			3.03"	3.63"	4.24"	4.84"	3.12"	3.74"	4.36"	4.99"			
	Ft.	M	14.7 W	12.2 W	10.5 W	9.2 W	14.2 W	11.9 W	10.2 W	8.9 W			
3.7CWC-120V-05	16.5	5.05	4.2	5.0	5.8	6.7	4.3	5.1	6.0	6.9	60	0.5	240.0
3.7CWC-120V-10	33.0	10.1	8.3	10.0	11.7	13.3	8.6	10.3	12.0	13.7	120	1.0	120.0
3.7CWC-120V-14	49.5	15.1	12.5	15.0	17.5	20.0	12.9	15.4	18.0	20.6	180	1.5	80.0
3.7CWC-120V-19	66.0	20.1	16.6	20.0	23.3	26.6	17.1	20.6	24.0	27.4	240	2.0	60.0
3.7CWC-120V-24	82.5	25.1	20.8	25.0	29.1	33.3	21.4	25.7	30.0	34.3	300	2.5	48.0
3.7CWC-120V-29	99.0	30.2	25.0	30.0	35.0	40.0	25.7	30.9	36.0	41.1	360	3.0	40.0
3.7CWC-120V-34	115.5	35.2	29.1	35.0	40.8	46.6	30.0	36.0	42.0	48.0	420	3.5	34.3
3.7CWC-120V-38	132.0	40.2	33.3	40.0	46.6	53.3	34.3	41.1	48.0	54.9	480	4.0	30.0
3.7CWC-120V-43	148.5	45.3	37.5	44.9	52.4	59.9	38.6	46.3	54.0	61.7	540	4.5	26.7
3.7CWC-120V-48	165.0	50.3	41.6	49.9	58.3	66.6	42.9	51.4	60.0	68.6	600	5.0	24.0
3.7CWC-120V-58	198.0	60.4	49.9	59.9	69.9	79.9	51.4	61.7	72.0	82.3	720	6.0	20.0
3.7CWC-120V-67	231.0	70.4	58.3	69.9	81.6	93.2	60.0	72.0	84.0	96.0	840	7.0	17.1
3.7CWC-120V-77	264.0	80.5	66.6	79.9	93.2	106.5	68.6	82.3	96.0	109.7	960	8.0	15.0
3.7CWC-120V-87	297.0	90.5	74.9	89.9	104.9	119.9	77.1	92.6	108.0	123.4	1080	9.0	13.3
3.7CWC-120V-96	330.0	100.6	83.2	99.9	116.5	133.2	85.7	102.9	120.0	137.1	1200	10.0	12.0
3.7CWC-120V-106	363.0	110.6	91.6	109.9	128.2	146.5	94.3	113.1	132.0	150.9	1320	11.0	10.9
3.7CWC-120V-115	396.0	120.7	99.9	119.9	139.8	159.8	102.9	123.4	144.0	164.6	1440	12.0	10.0
3.7CWC-120V-125	429.0	130.8	108.2	129.8	151.5	173.1	111.4	133.7	156.0	178.3	1560	13.0	9.2
3.7CWC-120V-135	462.0	140.8	116.5	139.8	163.1	186.4	120.0	144.0	168.0	192.0	1680	14.0	8.6
3.7CWC-120V-144	495.0	150.9	124.8	149.8	174.8	199.8	128.6	154.3	180.0	205.7	1800	15.0	8.0

Ft = feet
Ft^2 = square feet
M = meter

Installation with an Uncoupling Membrane

Installation/Technical information

Cable 3.7 Watts 240 Volts

Cable without magnetic field for uncoupling membrane

Model	Length		DREXMAT-TW WARMUP / DITRA-HEAT / PROVA-HEAT / LATICRETE				PRODESO HEAT / MAPEI / NUHEAT				Watt	Amp	Ohms
			Spacing (ft^2)				Spacing (ft^2)						
			2 & 3 Slots	3 Slots	3 & 4 Slots	4 Slots	2 & 3 Slots	3 Slots	3 & 4 Slots	4 Slots			
			3.03"	3.63"	4.24"	4.84"	3.12"	3.74"	4.36"	4.99"			
	Ft.	M	14.7 W	12.2 W	10.5 W	9.2 W	14.2 W	11.9 W	10.2 W	8.9 W			
3.7CWC-240V-10	33.0	10.1	8.3	10.0	11.7	13.3	8.6	10.3	12.0	13.7	120	0.5	480.0
3.7CWC-240V-14	49.5	15.1	12.5	15.0	17.5	20.0	12.9	15.4	18.0	20.6	180	0.8	320.0
3.7CWC-240V-19	66.0	20.2	16.6	20.0	23.3	26.6	17.1	20.6	24.0	27.4	240	1.0	240.0
3.7CWC-240V-24	82.5	25.1	20.8	25.0	29.1	33.3	21.4	25.7	30.0	34.3	300	1.3	192.0
3.7CWC-240V-29	99.0	30.2	25.0	30.0	35.0	40.0	25.7	30.9	36.0	41.1	360	1.5	160.0
3.7CWC-240V-34	115.5	35.2	29.1	35.0	40.8	46.6	30.0	36.0	42.0	48.0	420	1.8	137.1
3.7CWC-240V-38	132.0	40.2	33.3	40.0	46.6	53.3	34.3	41.1	48.0	54.9	480	2.0	120.0
3.7CWC-240V-43	148.5	45.3	37.5	44.9	52.4	59.9	38.6	46.3	54.0	61.7	540	2.3	106.7
3.7CWC-240V-48	165.0	50.2	41.6	49.9	58.3	66.6	42.9	51.4	60.0	68.6	600	2.5	96.0
3.7CWC-240V-53	175.0	53.3	44.1	53.0	61.8	70.6	45.5	54.5	63.6	72.7	650	2.7	88.6
3.7CWC-240V-58	198.0	60.4	49.9	59.9	69.9	79.9	51.4	61.7	72.0	82.3	720	3.0	80.0
3.7CWC-240V-63	208.0	63.4	52.5	63.0	73.4	83.9	54.0	64.8	75.6	86.4	770	3.2	74.8
3.7CWC-240V-67	231.0	70.4	58.3	69.9	81.6	93.2	60.0	72.0	84.0	96.0	840	3.5	68.6
3.7CWC-240V-72	238.0	72.5	60.0	72.0	84.0	96.0	61.8	74.2	86.5	98.9	880	3.7	65.5
3.7CWC-240V-77	264.0	80.4	66.6	79.9	93.2	106.5	68.6	82.3	96.0	109.7	960	4.0	60.0
3.7CWC-240V-82	271.0	82.6	68.4	82.0	95.7	109.4	70.4	84.5	98.5	112.6	1000	4.2	57.6
3.7CWC-240V-87	297.0	90.6	74.9	89.9	104.9	119.9	77.1	92.6	108.0	123.4	1080	4.5	53.3
3.7CWC-240V-96	330.0	100.6	83.2	99.9	116.5	133.2	85.7	102.9	120.0	137.1	1200	5.0	48.0
3.7CWC-240V-106	363.0	110.6	91.6	109.9	128.2	146.5	94.3	113.1	132.0	150.9	1320	5.5	43.6
3.7CWC-240V-115	396.0	120.8	99.9	119.9	139.8	159.8	102.9	123.4	144.0	164.6	1440	6.0	40.0
3.7CWC-240V-126	429.0	130.8	108.2	129.8	151.5	173.1	111.4	133.7	156.0	178.3	1560	6.5	36.9
3.7CWC-240V-135	462.0	140.8	116.5	139.8	163.1	186.4	120.0	144.0	168.0	192.0	1680	7.0	34.3
3.7CWC-240V-145	479.0	146.0	120.8	145.0	169.1	193.3	124.4	149.3	174.2	199.1	1770	7.4	32.5
3.7CWC-240V-154	528.0	161.0	133.2	159.8	186.4	213.1	137.1	164.6	192.0	219.4	1920	8.0	30.0
3.7CWC-240V-173	594.0	181.0	149.8	179.8	209.7	239.7	154.3	185.1	216.0	246.9	2160	9.0	26.7
3.7CWC-240V-192	660.0	201.2	166.5	199.8	233.0	266.3	171.4	205.7	240.0	274.3	2400	10.0	24.0
3.7CWC-240V-212	726.0	221.2	183.1	219.7	256.4	293.0	188.6	226.3	264.0	301.7	2640	11.0	21.8
3.7CWC-240V-231	792.0	241.4	199.8	239.7	279.7	319.6	205.7	246.9	288.0	329.1	2880	12.0	20.0
3.7CWC-240V-250	858.0	261.5	216.4	259.7	303.0	346.2	222.9	267.4	312.0	356.6	3120	13.0	18.5
3.7CWC-240V-270	924.0	281.6	233.0	279.7	326.3	372.9	240.0	288.0	336.0	384.0	3360	14.0	17.1
3.7CWC-240V-289	990.0	301.8	249.7	299.6	349.6	399.5	257.1	308.6	360.0	411.4	3600	15.0	16.0

Ft = feet Ft^2 = square feet M = meter

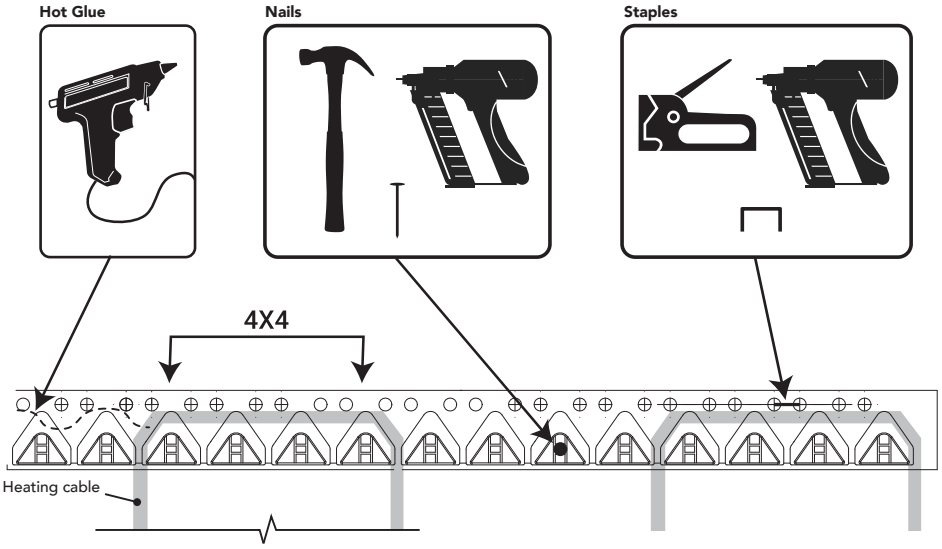
Installation with Plastic Cable Guides

IMPORTANT

Initial cable and sub-floor verification procedures are outlined on page 17 to page 20. Read and understand them carefully before installing. If you have any questions, please contact WarmAll.

Installation with Plastic Cable Guides Instructions

Attach the cable guides to the subfloor, perpendicularly to the direction of the cables, with screws hot glue, staples, nails or double-sided adhesive tape.

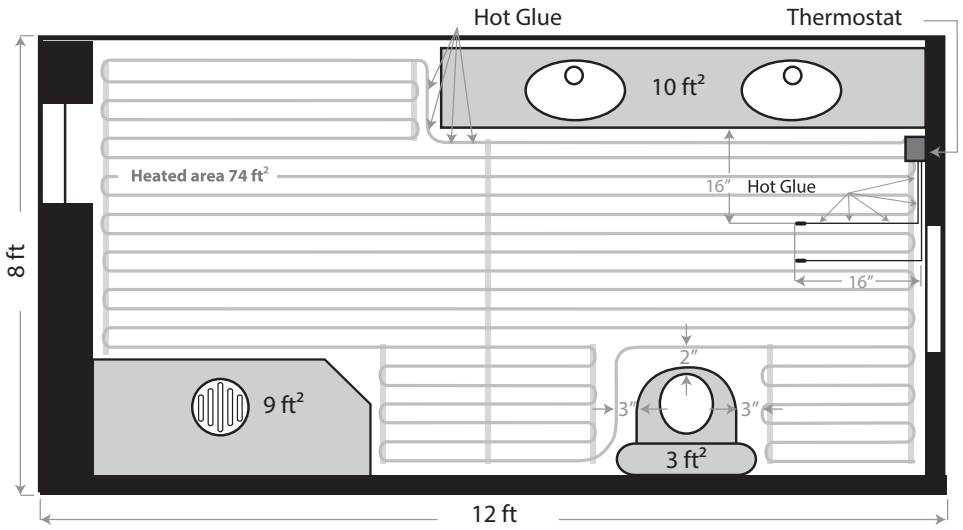


- **3 inch spacing = 14.8W per sq.ft.**
- **4 inch spacing = 11.2W per sq.ft.**
- **5 inch spacing = 8.8W per sq.ft.**
- **Optimum and/or standard spacing is 4 inches**

The elaboration of a floor plan is essential before laying the cable on the floor.
This will help visualize the layout. All WarmAll cables must be installed with a regular spacing of 3, 4 or 5 inches, 4 inches being the standard and are available in the 120V or 240V.

Installation with Plastic Cable Guides

Define the area of the floor to be heated where there is no fixed furniture (such as a shower, toilet, cupboard or washbasin, etc.) and calculate the area to be heated.



Example of cable installation on the floor

Total area 96 sq. ft. minus 22 sq. ft. of fixed furniture space equal heated area 74 sq. ft.

Using the specifications and the calculation of the total area to be heated, you can choose the desired heated cable size. Define the optimal layout of the floor to be heated using the table below. WarmAll (www.BuyWarmAll.com) to ensure adequate coverage. Choose a location to place the thermostat on a wall above the heated zone, where it can be reached by a 10 foot cold lead wire and the floor temperature sensor lead wire.

It is recommended to leave a minimum of 3 inches between the wall and the first heating cable.

Cable installation

After performing the first resistance and insulation tests, confirm that the cable has no faults. Write the results in the Test Log sheet. Place the cable so that the connection point and the temperature probe are at the expected starting layout position.

Bring the power cable to the thermostat or junction box.

Begin the installation of the heating cable according to the layout developed using the templates approved.

Installation with Plastic Cable Guides

IMPORTANT

Do not cut or shorten the cable. Do not expose it to mechanical stress. Avoid walking on the heating cable. Wear shoes with soft soles.

Installation/Technical information

Cable 3.7 Watts 120 Volts

Cable without magnetic field

Model	Length		Spacing (ft^2)			Watt	Amp	Ohms	Guides
			3"	4"	5"				
	Ft.	M	14.8 W	11.1 W	8.9 W				
3,7GCWC-120V-05	16.5	5.05	4.1	5.5	6.9	60	0.5	240.0	10
3,7GCWC-120V-10	33.0	10.1	8.3	11.0	13.8	120	1.0	120.0	10
3,7GCWC-120V-14	49.5	15.1	12.4	16.5	20.6	180	1.5	80.0	15
3,7GCWC-120V-19	66.0	20.1	16.5	22.0	27.5	240	2.0	60.0	20
3,7GCWC-120V-24	82.5	25.1	20.6	27.5	34.4	300	2.5	48.0	20
3,7GCWC-120V-29	99.0	30.2	24.8	33.0	41.3	360	3.0	40.0	20
3,7GCWC-120V-34	115.5	35.2	28.9	38.5	48.1	420	3.5	34.3	30
3,7GCWC-120V-38	132.0	40.2	33.0	44.0	55.0	480	4.0	30.0	30
3,7GCWC-120V-43	148.5	45.3	37.1	49.5	61.9	540	4.5	26.7	30
3,7GCWC-120V-48	165.0	50.3	41.3	55.0	68.8	600	5.0	24.0	40
3,7GCWC-120V-58	198.0	60.4	49.5	66.0	82.5	720	6.0	20.0	40
3,7GCWC-120V-67	231.0	70.4	57.8	77.0	96.3	840	7.0	17.1	50
3,7GCWC-120V-77	264.0	80.5	66.0	88.0	110.0	960	8.0	15.0	50
3,7GCWC-120V-87	297.0	90.5	74.3	99.0	123.8	1080	9.0	13.3	60
3,7GCWC-120V-96	330.0	100.6	82.5	110.0	137.5	1200	10.0	12.0	60
3,7GCWC-120V-106	363.0	110.6	90.8	121.0	151.3	1320	11.0	10.9	60
3,7GCWC-120V-115	396.0	120.7	99.0	132.0	165.0	1440	12.0	10.0	70
3,7GCWC-120V-125	429.0	130.8	107.3	143.0	178.8	1560	13.0	9.2	70
3,7GCWC-120V-135	462.0	140.8	115.5	154.0	192.5	1680	14.0	8.6	80
3,7GCWC-120V-144	495.0	150.9	123.8	165.0	206.3	1800	15.0	8.0	80

Ft = feet
Ft^2 = square feet
M = meter

Installation with Plastic Cable Guides

Installation/Technical information

Cable 3.7 Watts 240 Volts

Cable without magnetic field

Model	Length		Spacing (ft2)			Watt	Amp	Ohms	Guides
			3"	4"	5"				
	Ft.	M	14.8 W	11.1 W	8.9 W				
3.7GCWC-240V-10	33.0	10.1	8.3	11.0	13.8	120	0.5	480.0	10
3.7GCWC-240V-14	49.5	15.1	12.4	16.5	20.6	180	0.8	320.0	15
3.7GCWC-240V-19	66.0	20.2	16.5	22.0	27.5	240	1.0	240.0	20
3.7GCWC-240V-24	82.5	25.1	20.6	27.5	34.4	300	1.3	192.0	20
3.7GCWC-240V-29	99.0	30.2	24.8	33.0	41.3	360	1.5	160.0	20
3.7GCWC-240V-34	115.5	35.2	28.9	38.5	48.1	420	1.8	137.1	30
3.7GCWC-240V-38	132.0	40.2	33.0	44.0	55.0	480	2.0	120.0	30
3.7GCWC-240V-43	148.5	45.3	37.1	49.5	61.9	540	2.3	106.7	30
3.7GCWC-240V-48	165.0	50.2	41.3	55.0	68.8	600	2.5	96.0	40
3.7GCWC-240V-53	175.0	53.3	43.8	58.3	72.9	650	2.7	88.6	40
3.7GCWC-240V-58	198.0	60.4	49.5	66.0	82.5	720	3.0	80.0	40
3.7GCWC-240V-63	208.0	63.4	52.0	69.3	86.7	770	3.2	74.8	50
3.7GCWC-240V-67	231.0	70.4	57.8	77.0	96.3	840	3.5	68.6	50
3.7GCWC-240V-72	238.0	72.5	59.5	79.3	99.2	880	3.7	65.5	50
3.7GCWC-240V-77	264.0	80.4	66.0	88.0	110.0	960	4.0	60.0	50
3.7GCWC-240V-82	271.0	82.6	67.8	90.3	112.9	1000	4.2	57.6	60
3.7GCWC-240V-87	297.0	90.6	74.3	99.0	123.8	1080	4.5	53.3	60
3.7GCWC-240V-96	330.0	100.6	82.5	110.0	137.5	1200	5.0	48.0	60
3.7GCWC-240V-106	363.0	110.6	90.8	121.0	151.3	1320	5.5	43.6	60
3.7GCWC-240V-115	396.0	120.8	99.0	132.0	165.0	1440	6.0	40.0	70
3.7GCWC-240V-126	429.0	130.8	107.3	143.0	178.8	1560	6.5	36.9	70
3.7GCWC-240V-135	462.0	140.8	115.5	154.0	192.5	1680	7.0	34.3	80
3.7GCWC-240V-145	479.0	146.0	119.8	159.7	199.6	1770	7.4	32.5	80
3.7GCWC-240V-154	528.0	161.0	132.0	176.0	220.0	1920	8.0	30.0	80
3.7GCWC-240V-173	594.0	181.0	148.5	198.0	247.5	2160	9.0	26.7	90
3.7GCWC-240V-192	660.0	201.2	165.0	220.0	275.0	2400	10.0	24.0	90
3.7GCWC-240V-212	726.0	221.2	181.5	242.0	302.5	2640	11.0	21.8	90
3.7GCWC-240V-231	792.0	241.4	198.0	264.0	330.0	2880	12.0	20.0	100
3.7GCWC-240V-250	858.0	261.5	214.5	286.0	357.5	3120	13.0	18.5	100
3.7GCWC-240V-270	924.0	281.6	231.0	308.0	385.0	3360	14.0	17.1	110
3.7GCWC-240V-289	990.0	301.8	247.5	330.0	412.5	3600	15.0	16.0	110

Ft = feet Ft^2 = square feet M = meter

Cover the cable with cement / thinset

Depending on the floor covering you have chosen (such as cement, ceramics, stone, engineered wood, laminate flooring, etc.), cover the heating cable system, including the floor sensor and heating cable connections to the cold lead with an appropriate thickness of cement to obtain a smooth and straight finish.

General Information

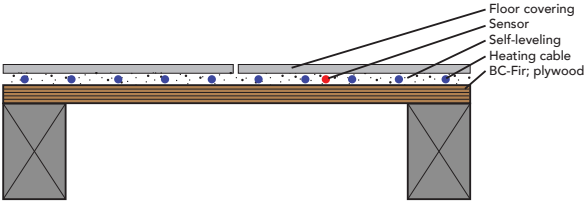
WarmAll recommends that you consult the flooring manufacturer for specifications. Preparation and installation of the flooring must be carried out according to the manufacturer's recommendations.

IMPORTANT

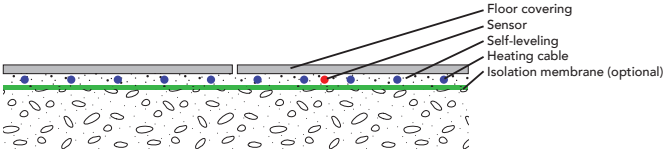
Perform the 3rd cable resistance & insulation test when the cables are covered with fresh cement.

The system must not be switched on until the cement / thinset is completely dry. A minimum of 4 weeks is recommended.

Installation on BC-Fir (Fir tree) plywood



Cement installation



WarmAll recommends taking pictures all along or during the installation.

The thermostat can now be connected by following the manufacturer's instructions. It is recommended that a qualified professional exicutes the connection to ensure proper operation of the system.

Connection to the electrical network

You must write the appropriate information on the breaker in the electrical panel. Please identify with a label (Room ID, #) the selected breaker feeding the heating cable.

Perform a 4th cable resistance & insulation test.
Write the results in the Test log Sheet.

Write the information in the Test Log sheet

It is important that the installer sends to WarmAll the Test Log Sheet through mail, fax or e-mail immediately after the installation of the system (cable and thermostat). Failure to do so will void the Limited Warranties. WarmAll will register your Warranty only upon receipt of these forms as well as purehase invoices as mentioned in the warranty information sheet.

Enjoy the comfort of your WarmAll floor heating system.

The system is now ready for use.

Registration of all tests is mandatory

To obtain our Limited Warranty (25 years on the cable and 5 years on the thermostat) or our Comprehensive Limited Warranty (25 years on cable, 5 years on thermostat and 10 years on installation) you must perform these tests and record the results on the test log Sheet. You must perform all Cable & floor sensor tests.

Check cable integrity when to test?

1) When receiving the cable;
2) After laying the cable in the membrane or subfloor with our plastic cable guides and before covering the the cable with cement;
3) After covering the cable with cement and before laying the floor covering;
4) After the installation of the floor covering and before connecting the heating cable to the thermostat. Enter all test results on the warranty log.

Before removing the plastic that covers the cable on the spool, the cable insulation and resistance should be verified and compared to the factory values to ensure the cable is intact. Factory test data is on the grey tag at the end of the cold lead black cable. Results should be similar to the factory result. Please refer to it. If it is more than +/-10% difference, call WarmAll.

You must perform the Insulation Resistance Test, the Resistance Test, and the Sensor Resistance Test (the floor sensors, are in the thermostat & cable box) during the installation process.

Use an appropriate multimeter to measure the resistance between the 2 conductor leads. If an automatic multimeter is used the reading will be taken instantly. If the multimeter is not automatic, set it to 200 Ω for a cable under 200 Ω or at the higher value for a cable over 200 Ω. Write the result on the Test Log Sheet to register your Warranty. Please check that your measuring instrument is set properly calibrated.

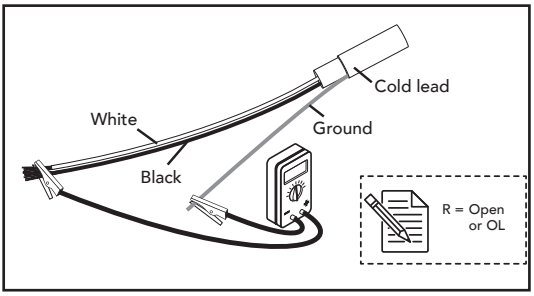
Heating Cable Insulation Resistance Test

This test ensures that the insulating jackets of the cable are not damaged. A low value indicates the cable has been damaged and must be replaced. Use a multimeter or a megohmmeter.

Connect the ground wire to the black lead of the tester and both load wires (heating cable) to the red lead of the multimeter or megger.

Make sure the meter reads "OPEN" or "OL" or 'I'. If you get a different reading, contact WarmAll at 1-855-396-5600.

Record these readings on the test log sheet to register your warranty.



For the Full Limited Warranty to be valid you must perform the insulation resistance test using a megohmmeter (megger). In a two-step method, perform the above test at 500 volts DC and then at 1000 volts DC. Please record the readings on the Test Log Sheet.

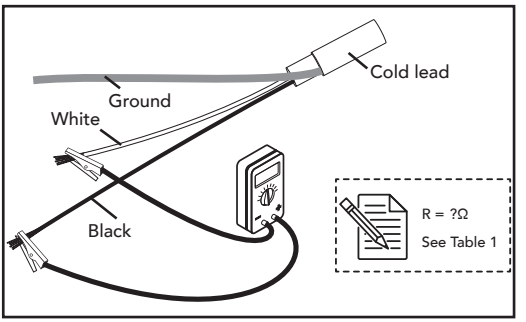
Heating Cable Insulation Resistance Test

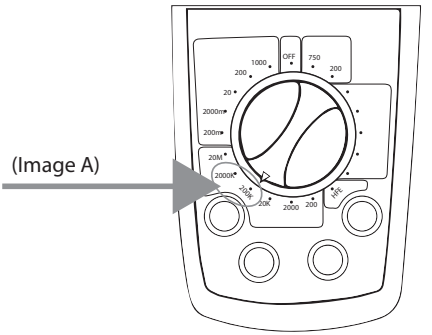
This test measures the resistance of the Cable and is used to determine circuit integrity.

Set your multimeter to the 200 or 2000 ohms range (see image A).

On 120V, connect the multimeter leads to the black and the white cold lead wires. On 240V, connect the multimeter leads to the black and the red cold lead wires.

Compare this resistance reading to the resistance specified in the Product Selection or cable tag. The value should be within ±10%. If you get a different reading, contact WrmAll at 1-855-396-5600. Record these readings on the Test Log Sheet to register your warranty.





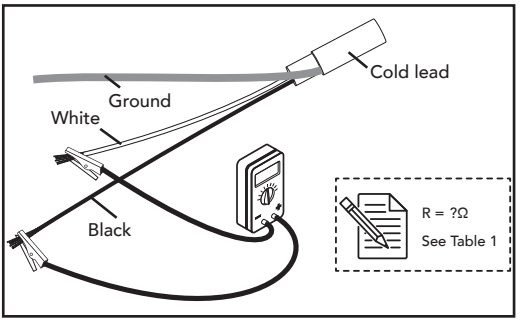
Sensor Resistance Test

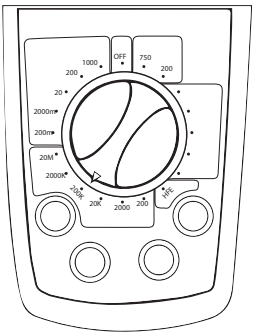
This test measures the resistance of the floor sensor and is used to verify the sensor integrity.

Set your multimeter to the 200K ohm range. Connect the multimeter leads to the sensor lead wires.

Make sure the meter reads between 9-25K ohms. If you get a different reading, contact WarmAll at 1-855-396-5600.

Record these readings on the Test Log Sheet to register your warranty.





Notes

Notes

Notes