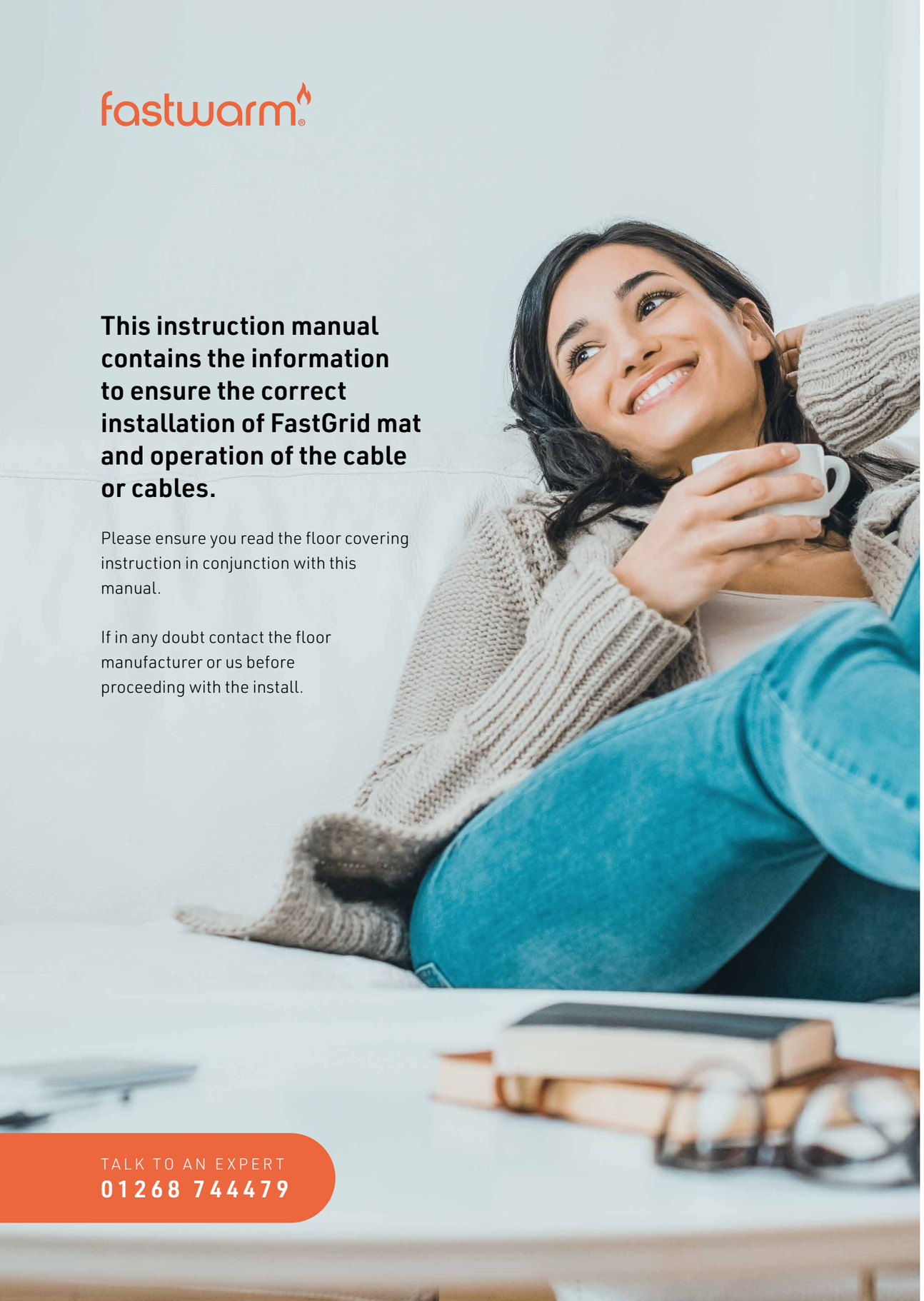
Fastwarm® FastGrid System

INSTALLATION MANUAL

- Fleece Backed Decoupling Membrane System for Fastwarm® Ultra Thin 2mm Cables
- Compliant to latest IEE regulations
- UKCA approved
- Lifetime warranty



This instruction manual contains the information to ensure the correct installation of FastGrid mat and operation of the cable or cables.

Please ensure you read the floor covering instruction in conjunction with this manual.

If in any doubt contact the floor manufacturer or us before proceeding with the install.

TALK TO AN EXPERT
01268 744479

Contents

CE approved
All our Fastwarm® cables have been designed to conform to the current regs – Part P compliant.
If your installer is in any doubt concerning the installation, please call us.

PLEASE READ THESE INSTRUCTIONS PRIOR TO STARTING INSTALLATION

Fastwarm® FastGrid Matting system has been developed to be installed below most floor coverings.

Its key benefits are its fleece backing providing a decoupling membrane for tiles to be applied above.

It may also be installed below engineered wood/laminated or vinyl floor coverings providing the FastGrid matting has been covered with a min of 10mm layer of flexible self-smoothing compound any underlay used for engineered wood or laminate floor covering must be a suitable low tog underlay product.

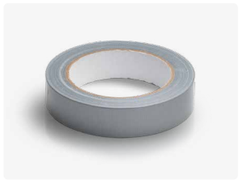
Always check with the floor covering manufacturer that their product is suitable for under floor heating.

Contents Of Kit

Drum or drums of twin core heating cable

Acrylic floor primer

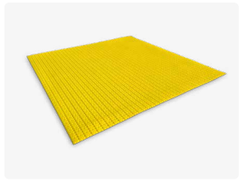
Roller for application of floor primer



Fixing tape

Programmable digital room thermostat inclusive of floor temperature sensor

10mm diameter Conduit for floor sensor



FastGrid Mat
(Sold Separately)

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Installation Requirements

- Ensure FastGrid is fully adhered prior to laying any cables or floor finishes above. A minimum of a 6mm notch trowel should be used.
- **THE INSTALLATION MUST CONFORM TO THE CURRENT REGULATIONS AND MUST BE CARRIED OUT BY A SUITABLY QUALIFIED PERSON.**
- Fastwarm® cables are 10 watts per linear metre.
- The wattage per square meter is determined by the spacing of the cable spacing the cables , do not place the cables closer than 50 mm at any point.
- **NEVER OVERLAP THE CABLE (THIS WILL CAUSE THE CABLE TO FAIL)**
- The first part of the cable is the 'cold tail" (coloured black) this is a three-core cable live – neutral – earth. The live and the neutral are connected to the thermostat terminals and the earth to the incoming supply earth.
- The heating element is the Orange Cable, and this is a double insulated cable.
- For larger areas two or more cables are supplied.
  Two cables can usually be connected at the thermostat. More than two will need to be terminated within a wall mounted accessible junction box. (NB most thermostats have a 16-Amp maximum load)
- Do not cut or attempt to shorten the Orange Heating Cable.
- The joint between the cold tail and the heating cable must be below the floor covering and fully encapsulated in self smoothing compound or tile adhesive. The same applies to the end joint of the heating cable. The cold tail joint and the end joint must NOT be taped over this will cause the joint to fail and invalidate the warranty.
- The Fastwarm™ FastGrid is suitable for installing on a sub floor which are sound and suitable to accomindate floor coverings
- The subfloor must be checked by the installer for suitability.
- NB newly screeded or concrete sub floors must be allowed to fully dry (this is typically 24 hours per 1mm of depth of screed/concrete. Unless an accelerator has been added to the screed/concrete.

IF IN ANY DOUBT THEN A MOISTURE CONTENT TEST MUST BE DONE PRIOR TO INSTALLATION.

Installation By Qualified Person

IMPORTANT
Any electrical installation presents a risk of fire or electrical shock.

Only a qualified person should test and connect the installation, chase walls and install back boxes for fused spurs and thermostats.

This is to ensure all work conforms to current regulations.

DUE TO THE REQUIREMENTS OF THE CURRENT IEE REGULATIONS PART P ONLY A QUALIFIED PERSON SHOULD TEST AND MAKE THE FINAL CONNECTIONS TO THE INSTALLATION.

Fastwarm™ electric underfloor heating system must be controlled via an RCD protected circuit. For a system that does not exceed 13 amps a fused spur that has all pole separation can be used.

Any larger than a 13 Amp system a suitable protected device must be used.

IF IN ANY DOUBT PLEASE CONTACT US
All connections must comply with Part P of the IEE regulations 18th edition.

VERY IMPORTANT
All connections must comply with Part P of the CURRENT IEE regulations..

Always install the thermostat for a Bathroom outside of the bathroom and use the floor sensor (probe) that is provided with the thermostat.

Testing The Heating System

The Fastwarm® cable is tested prior to shipping but it must be tested as follows

1. After unpacking and prior to installation (record the readings)
2. At this point installing electrician must carry out a 500 Volt DC insulation resistance test (record the readings)
3. Once you have installed it on the sub floor (record the readings)
4. If a smooth levelling compound has been used test again prior to the final floor covering (record the readings)

The test is a reading in Ohms and can be within 10% plus or minus of the value shown on the table on Page 8 (measured at a room temperature of 20 degrees.) NB hot or cold conditions can cause the resistance to alter.

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Installation Instructions

STEP 1

Ensure the sub floor has been solidly fixed down and free of dust and debris.
Timber floorboards must be covered with a suitable thickness marine ply or suitable tile backer boards (PLEASE CONTACT FOR ADVICE IF YOU ARE UNSURE)

Do not use XPS boards on a timber sub floor.
Bitumen coated floors must be covered by a tile backer board or 3 to 5 mm of a self-smoothing compound that is suitable to cover bitumen.

Never install a cable or mat onto a bitumen covered surface.

STEP 2

Prime the floor with the acrylic based primer (this primer is not suitable for Anhydrite screeds).

Leave to dry, typically 1 to 2 hours dependent of air temperature.

Avoid excess foot traffic on primed surface.

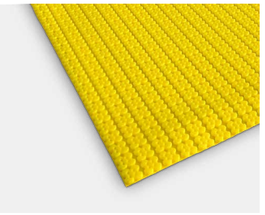
Always check that the self-smoothing compound and tile adhesive are compatible with the primer (most are) but if in doubt check with the manufacturer of the self-smoothing compound and adhesive.

STEP 3

If using tile backer boards or XPS insulation boards, please follow the manufacturer's instructions.

Fix the boards in a brick bond fashion. Either fix the boards with a cement-based tile adhesive or screws and washers. Fix the screws at a maximum 300mm centres dependent on the sub floor.

IMPORTANT
Do NOT use XPS insulations boards on to a timber sub floor, use tile backer boards to give a stable sub floor.



STEP 4

Installing the FastGrid Matting

4.1 Cut the FastGrid Matting to fit the floor area you are covering. Fastwarm FatGrid Matting can be easily cut with a utility knife (you can mark the matting with if required)

4.2 Once FastGrid matting is cut to shape for the room its intended to be installed in, loose lay the sections of matting to ensure it finishes flush to the wall and mark along the edge to where the other edges of FastGrid matting are to be placed. This will act as a guide as to where to spread the adhesive used to fix each section of FastGrid matting.

4.3 Prime the subfloor/insulation boards using a good quality primer such as ULTRA Pro Primer. Once primed allow to fully dry prior to using any adhesive.

4.4 Trowel the bed of adhesive onto the subfloor/insulation boards using a 6mm square notched trowel. Evenly spread the adhesive over the area you want to cover.

4.5 Lay the FastGrid on to the freshly troweled adhesive bed, making any adjustments were needed to ensure a flush fit to the wall and fixed appliances.

Using the flat side of your trowel, press the Fastwarm FastGrid matting onto the adhesive bed for correct adhesion. Work in small areas to ensure each section of the matting is pressed into place correctly and that there is full adhesion between the fleece and the adhesive. (the matting will darken when pressed into the wet adhesive)

Repeat the process for the rest of the Fastwarm FastGrid matting, as soon as the matting is down and the adhesive is dry it can be walked on ready to install the Fastwarm Loose Cable (see adhesive manufacturer's instructions for adhesive drying times).

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STEP 5

Refer to the testing procedure on Page 6 it is very important that the testing is carried out.

Length (M)	Watts(W)	Resistance (Ohms)
11.5	115W	460.0
14	140W	377.9
17	170W	311.2
22.5	225W	235.1
29	290W	182.4
35	350W	151.1
40	400W	132.3
48	480W	110.2
56	560W	94.5
64	640W	82.7
70	700W	75.6
76	760W	69.6
82	820W	64.5
92	920W	57.5
104	1040W	50.9
114	1140W	46.4
125	1250W	42.3
145	1450W	36.5
160	1600W	33.1
180	1800W	29.4

STEP 6

Calculate the cable spacing.

IMPORTANT
This is a very important step and MUST be done correctly to ensure all the cable is used up, Before you start measure the area to be heated in sqm (do not include the area taken up by fixed objects such as toilets and kitchen units etc)

Space at 10cm apart for output of 100w per m²
Space at 7.5cm apart for output of 135w per m²
Space at 5cm apart for output of 200w per m²

Drum Sizes			Coverage (m²)		
Drum 1 (m)	Drum 2 (m)	Cable Length (m)	5cm Spacing (m²)	7.5cm Spacing (m²)	10cm Spacing (m²)
11.5	-	11.5	0.6	0.9	1.15
14	-	14	0.7	1.1	1.4
17	-	17	0.8	1.3	1.7
22.5	-	22.5	1.1	1.7	2.25
29	-	29	1.45	2.2	2.9
35	-	35	1.75	2.7	3.5
40	-	40	2	3.1	4
48	-	48	2.4	3.7	4.8
56	-	56	2.8	4.3	5.6
64	-	64	3.2	5	6.4
70	-	70	3.5	5.4	7
76	-	76	3.8	5.8	7.6
82	-	82	4.1	6.3	8.2
92	-	92	4.6	6.9	9.2
104	-	104	5.2	8	10.4
114	-	114	5.7	8.8	11.4
125	-	125	6.2	9.6	12.5
145	-	145	7.2	11.2	14.5
160	-	160	8	12.3	16
180	-	180	9	13.8	18
104	104	208	10.4	16	20.8
114	114	228	11.4	17.6	22.8
125	125	250	12.5	19.3	25
145	125	270	13.5	20.8	27
145	145	290	14.5	22.3	29
160	145	305	15.3	23.1	30.5
160	160	320	16	24.5	32
180	160	345	17.3	25.4	34.5
180	180	360	18	27.7	36

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STEP 7

After calculating the spacing of the cable, leave a perimeter of 50mm-75mm around the edge of the room. If the calculated spacing is less than 5cms, do not continue and do not install, The cable size is too big for the area. A spacing of 10cms will only warm the floor and not heat the room. If requiring a primary heat source, space the cable between 50mm- 75mm (this will always depend on the insulation thickness and type of floor construction).

STEP 8

Referencing the table in step 6, begin to lay the heating cable in the FastGrid Matting at the recommended spacing. Install the Electrical Heating system by pressing the cables into the grooved pattern on the matting . The Orange Heating Element MUST NOT be cut or cross at any point (the heater cable/s should not be spaced closer than 50mm at any point).

STEP 9

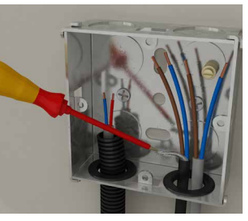
COLD TAIL AND END JOINT INSTALLATION
When installing the heating element/cable you need to be careful with how you install the end joint and cold tail joint (the join between the supply lead and the heating cable). They can potentially overheat if the following steps are not taken.

The joints on the heating cables are a larger diameter than the heating element, you will need to cut a small channel for the joints to sit into the subfloor or the insulation boards.

Once they have been secured in the channel, it is important that you do NOT cover them with tape as this will create an air pocket preventing the joint from releasing the heat, this can lead to a potential failure in the future.
The end joint can be secured in place by taping the Orange heating element just before the joint to help secure it in place. This will ensure the joint is NOT covered with tape. Both these heating joints MUST now be fully encapsulated within levelling compound and/or tile adhesive.

STEP 10

Check and record the insulation resistance value and the cable resistance value.



STEP 11

The cold tail from the cable has an earth which is a braided wire. If it is necessary to shorten the cold tail, at the thermostat, then the earth braid must be 'unpicked' with a small screwdriver or similar tool.

IT MUST NOT BE CUT ALONG ITS LENGTH as this will cause it to become unravelled. It should then be twisted back together and connected to the incoming earth on the power supply.

STEP 12

Position the sensor in the black conduit supplied from the thermostat position down in between two runs of cable (not overlapping the heating cable) and tape into position. If using insulation boards, these can be cut to allow the conduit to be placed inside. If installing directly onto plywood then a groove can be cut using a sharp chisel (beware of pipes). The joint between the heating cable and the cold tail can also be placed inside a groove in the floor as this can be bulky and difficult to tile over. The sensor wire can be shortened or lengthened. If you need to cut the sensor wire you must only cut the end with the exposed wires.

DO NOT cut the end which contains the plastic sensor. The connections to the thermostat can now be made.

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STEP 13

Test the heating cable as before.

STEP 14

If possible, cover the cables with a thin layer of suitable latex based levelling compound (5-6mm).

This will help protect the cables when tiling. You may tile directly over the cables, however extra care must be taken not to dislodge the cables or to damage the cable in anyway.

If you are using a vinyl floor covering, then a minimum 10mm self-smoothing compound should be used to cover the FastGrid matting. **CONSULT VINYL FLOOR INSTALLER BEFORE USING THE COMPOUND TO CHECK COMPATIBILITY.**

If carpet is to be used as the finished floor covering, then a 10mm self smoothing compound needs to be used in conjunction with a suitable low tog underlay and carpet.

You can now lay your flooring according to your floor manufacturer's instructions. Please refer to adhesive manufacturer's guidelines for drying times before turning on your heating system, this usually takes around 7 days, the floor temperature should be increased gradually by 1-2 degrees per day over a 2 week period to reduce the risk of force drying. If in any doubt, please check with adhesive/latex manufacturers for advice.

STEP 15

If you a tile floor covering, use a flexible tile adhesive and grout as per industry standards and follow the manufacturers advice. Finally wait at least 7 days before turning on to allow time to dry, the floor temperature should be increased gradually by 1-2 degrees per day over a 2 week period to reduce the risk of force drying. NOTE the heating may be slow to react at first, especially if installed on a new screed floor or in a new building. Start by setting the floor temperature at approx 18°C - and build up by 1°C per day until your desired temperature is reached. Please see separate instructions for connection and operation of digital thermostat.

Do's and Dont's for Installation

- ✓ **Do** read through these instructions carefully before beginning work.
- ✓ **Do** use flexible adhesives and grouts.
- ✓ **Do** test the cable before tiling.
- ✓ **Do** be careful not to damage or dislodge the cable during tiling.
- ✓ **Do** ensure the cable is spaced no closer than 50mm between loops.
- ✓ **Do** wait at least 7 days before turning on the system.
- ✓ **Do** read the separate installation and operating instructions for the thermostat.
- ✓ **Do** ensure the joint between the cold tails and heating cable is beneath the tiles.

- ✗ **Don't** attempt to cut the heating cable at any point.
- ✗ **Don't** allow the cables to cross or touch.
- ✗ **Don't** allow excessive foot traffic over the wire before tiling.
- ✗ **Don't** cut tiles over the heating cable.
- ✗ **Don't** place tools or stacks of tiles on top of cable.
- ✗ **Don't** place any product over the floor covering that has a higher tog value than 2.5.
- ✗ **Don't** place any bean bags or fixed furniture over the floor covering.
- ✗ **Don't** place cable closer than 100mm near any pipes.
- ✗ **Don't** turn on the heating mat/cable while it is rolled up or still on the drum.

IMPORTANT
Please ensure that the cold tail joint (the join between the heating cable and flexible supply lead) is fully encapsulated in adhesive or levelling compound underneath the floor covering.

Please ensure that the end joint (the join at the end of the cable which is black) is also fully encapsulated in tile adhesive or levelling compound underneath the floor covering.

Both the cold tail joint and end joint MUST NOT be covered with tape, this can cause the cable to overheat and eventually fail!

DO NOT BEND THE COLD TAIL JOINT AT ANY POINT.

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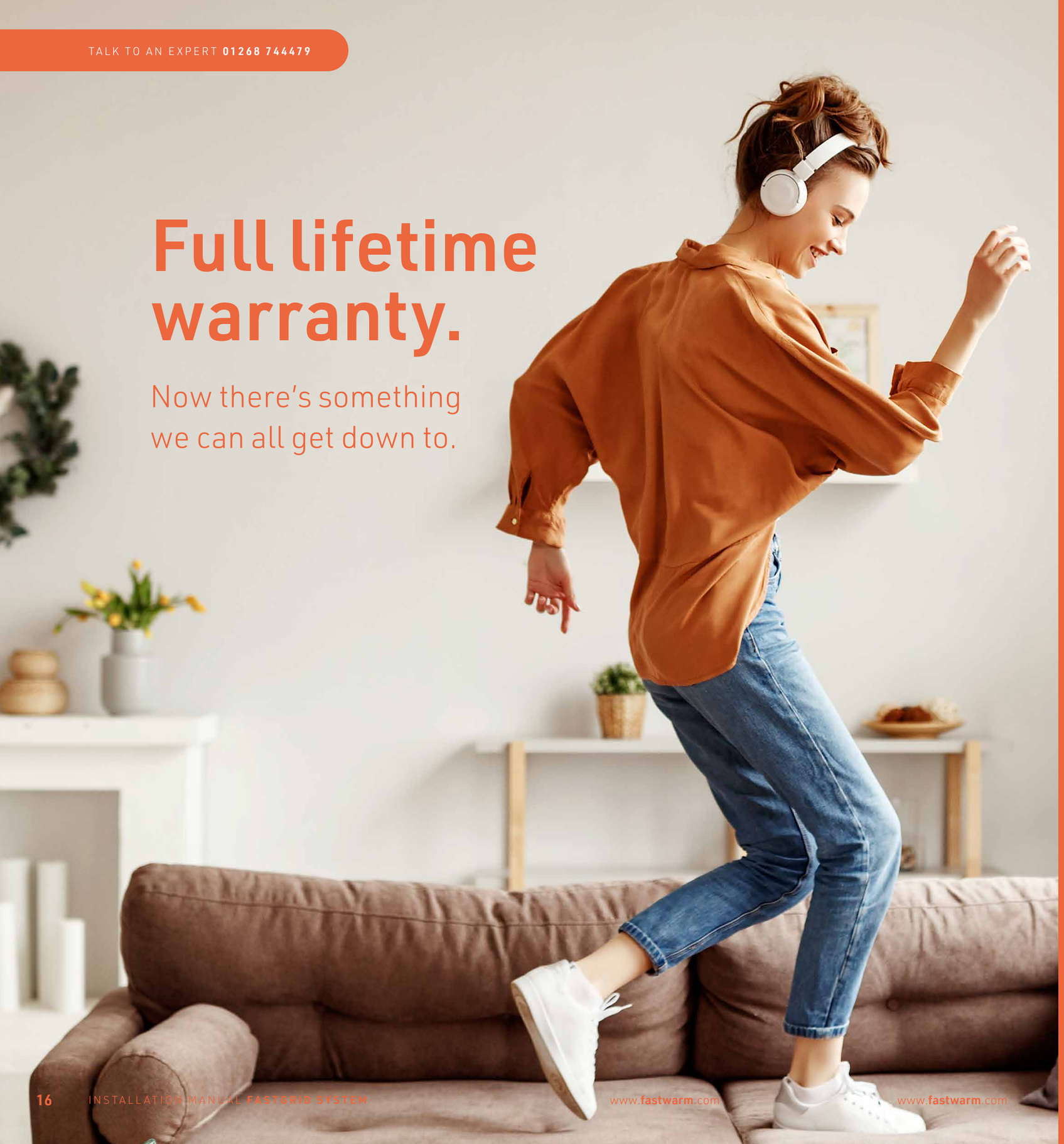
fast grid by fastwarm

Full lifetime warranty.

Now there's something we can all get down to.



Fastwarm® floor heating cables come with a full lifetime warranty.

The warranty does not cover installations made by unauthorized persons or faults caused by incorrect design by others / misuse / damage caused by others / damage in transit / incorrect installation and any other subsequent damage that may occur. Replacement will be fully chargeable if the damage is because of any of the above reasons.

Please visit website for full terms & conditions.
www.fastwarm.com

fastwarm™

fastwarm®

Safety Guidelines

IMPORTANT
This installation manual has been designed for your safety. For a successful installation please make sure you have understood the guidelines and adhered to all the instructions.

Flat bottomed furniture MUST NOT BE placed over areas where the heating mat/cable is installed as this can restrict airflow to the floor, causing thermal blocking, and in extreme cases may lead to the cable overheating causing a possible fire hazard. This also includes rugs, bean bags, or any item which has a tog value greater than 2.5.

The supplied Commissioning Record MUST BE completed, including a floor plan sketch, to indicate heated areas, which must be permanently fixed in or near the distribution/fuse board as required by the 18th Edition BS7671 amendment 3.


MATTRESSES


BEAN BAGS


ANIMAL BEDS


THICK RUGS


FLAT BASED FURNITURE

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