

1 Scope

This specification covers Series Heating Cable Mats and their installation for surface floor warming application.

2 Applicable documents

2.1 The cable

The cable sets, put on self-adhesive flexible fibreglass mesh and secured by adhesive tape, shall comply (certified) with the following standards:

- CAN/CSA-C22.2 NO. 130-03, Requirements for electrical resistance heating cables and heating device sets ; designation **G** for general use and designation **W** for wet environment
- UL 1673 – Electric Space Heating Cables;

Writer's notes:

CAN/CSA-C22.2 NO. 130-03, designation **G** and **W**: For interior floor usage only, cables need to be drowned in concrete or mortar. Wet environments such as a floor ceramic shower, washroom/laundry room and in Canada, a pool apron.

UL 1673: American standard for the manufacturing and installation of electric heating cables.

3 Specifications

3.1 Dimensions

Depending on the required electrical power and installation application, the mat shall be available in different lengths to optimise the floor surface to heat. Make sure to properly plan the products required since they cannot be modified. The cable shall have a nominal diameter of 1/8 inch (3.2 mm) and a maximum of 5/32 inch (3.9 mm). The self-adhesive mesh will be manufactured in a standard width of 24 inches (61 cm).

3.2 Mat structure

Put on a self-adhesive flexible fiberglass mesh, the Green Cable™ *Surface* will be secured on both sides and in the middle of the mesh by an adhesive tape.

For the structure of the Green Cable™ *Surface*, please refer to the technical drawing of the Green Cable *Mat*.

3.3 Compatibility with installation surfaces and floor coverings

For an application requiring a surface installation, the mat shall be compatible with installation surfaces and floor coverings as indicated in the following tables.

Writer's notes :

Make the selection according to the specific project.

Green Cable <i>Mat</i>		
	Floor covering	
Installation surface	Ceramic	Natural stone
Plywood	✓	✓
Smooth concrete ¹	✓	✓
Cement panels	✓	✓
Ceramic	✓	✓
Acoustic membrane	✓	✓
Anti-fracture membrane	✓	✓
Scratch coat	✓	✓
Mortar bed ¹	✓	✓
¹ The concrete slab (or mortar bed) must be insulated to avoid heat loss from below. FLEXTHERM also recommends that all rooms supported by the concrete slab be equipped with a FLEXTHERM floor heating system to avoid perimeter heat loss.		

3.4 Electrical specifications

For an application requiring a surface installation, the mat shall comply with the electrical characteristics as described in the following table. The cable used for the mat is a 3 Watt cable at a regular spacing of 3 inches (7.6 cm).

Electrical characteristics	
Standard voltage	120 and 240 volts (208 volts available upon request)
Output	129 W/m ² (12 W/ft ²)
Connection to thermostat	Simple installation: a single cold lead is connected to the thermostat (return feed on the same cable)
Cold lead	2.1 m (7 ft) Two conductors and grounding
Certification / Mark of Approval	cCSAus, for embedded floor warming applications, in Canada and USA. Dry and Wet environments. CSA file N° 99786
No significant electromagnetic field emission*	✓

* Based on the installation instructions included in the FLEXTHERM installation guide, the recorded EMF measurement is considered insignificant (between 0.25 mG and 0.5 mG).

3.5 Electrical voltage

The cable shall be compatible with electrical installations of 120, 240 VAC or 208 VAC.

3.6 Mat securing system

The securing system of the mat will be a self-adhesive flexible fiberglass mesh.

3.7 Controls

FLP series programmable thermostat or FLK series non-programmable thermostat incorporating a class A certified GFCI, electronic, with low voltage module, including at least one temperature sensor inserted to the floor.

For an installation that requires more than 15A, use the FLE series expansion unit.

Please refer to the guide for installation.

3.8 Product to be specified

Order according to the surface to cover. The cable cannot be cut or modified.

- Local or room: _____
- Surface to be covered: _____
- Floor covering: Ceramic Natural stone
- Installation surface: _____
- Green Cable Mat model : _____
- Controls:
(write down the required quantities) FLP FLK FLE

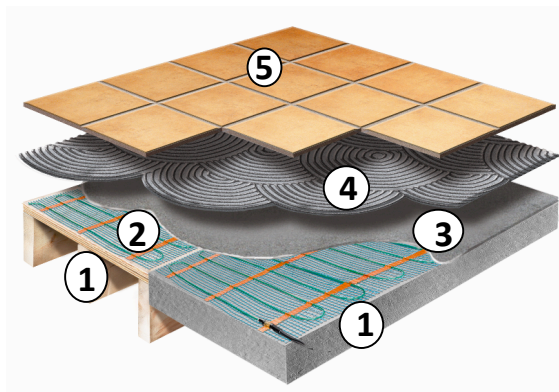
Writer's notes :

Due to its specific dimensions (fixed width of 24" and standard length), the mat cannot fit a room precisely. For this reason and to prevent the installer from having to remove the cable from the mat to install it like a regular cable (with no installation gauges), we recommend choosing a mat that does not exceed 80% of the available heating surface.

4 Installation

- The Green Cable *Mat* is perfect for square or rectangular shaped rooms.
- Secure the heating mat in accordance to FLEXTHERM Green Cable *Mat* installation guide; to concrete or plywood with its self-adhesive mesh.
- Place the thermostat remote sensing probe in accordance to FLEXTHERM Green Cable *Mat* installation guide.
- Do not cross expansion joints with cable.
- **Do not alter heating cable length.**
- Ensure cables do not bunch or cross.
- The system can be operated only after the mortar or self-levelling underlayment has completely cured. This waiting period is essential to ensure that the mortar or self-levelling underlayment is properly set. Refer to the manufacturer's instructions to verify the curing time for the product you are using.
- Please refer to the installation guide for complete instructions, available with the product and on our website www.flextherm.com.

5 Application



- 1 Wood structure or concrete slab
- 2 Floor heating system
- 3 Polymer-modified mortar or self-levelling underlayment
- 4 Adhesive (mortar)
- 5 Ceramic or natural stone

6 Quality assurance

6.1 Warranty

The Green Cable *Mat* shall bear a 25 year limited warranty against any manufacturing defect when it's installed in conformity with the installation guide.

Please refer to the complete warranty card available in the installation guide included with the product or on our website www.flextherm.com.

6.2 General

Each product is inspected at the source, during manufacturing and at the end, in order to ensure compliance with the present specification.

6.3 Product manufacturing history

Every product has a unique serial number that traces the product manufacturing history.

6.4 Repairs

The cable can be repaired if it's damaged during or after the installation. Contact our customer service for a diagnosis and a recommendation for a technician who is qualified to repair FLEXTHERM heating cables.

7 Packaging

The product is shipped in a box clearly identified with its contents. Each box shall include

- One roll of heating mat;
- Installation instructions including testing procedures during installation.

Each roll has a seal in order to ensure the integrity of the product.

8 Lexicon

Spacing: distance between two adjacent strands of cable.

Series Heating Cable Sets: combination of heating cable and a cold lead to connect the cable to electrical source, assembled by supplier.