



## MILLIMAT™ – Heating Mat Nexans Underfloor Heating



NOW WITH  
Hidden splice technology!



## Nexans invented the heating cable in 1926. We are proud to be part of the world's largest cable manufacturing group.

Nexans heating cables are a Norwegian invention and product. We have been producing heating cables since 1926. Over the years we have continued developing our products to meet the changing demands of the marketplace.

Nexans heating cables meet the highest quality standards and are certified by local electrical appliance organizations in all major markets. Our heating cables come with a product warranty given that they are installed correctly according to the manufacturer's installation instructions.

### Nexans – global expert in cables and cabling systems

Nexans is the worldwide leader in the cable industry, with industrial presence in more than 30 countries and commercial activities throughout the world. Nexans employs 22.000 people and had sales in 2007 of euros 7.4 billion. Nexans' know-how and innovation skills are used for developing increasingly competitive cables for any industry:- from energy networks and telecommunications to railway projects, for the oil and gas industry etc.

### Solutions for all room types

Nexans underfloor heating is ideal in most types of rooms, for example:- bath-

rooms, toilets, hallways, living rooms, kitchens and rooms where children play. The floor is a large area with a low surface temperature. Producing heat under the floor however will ensure radiant heat from the floor and a favourable heat distribution throughout the room.

Renovation of existing rooms improves the standard and value of any home. It is also the perfect time to install electrical underfloor heating, as electrical floor heating is a cost effective and environmentally friendly way of keeping your home comfortable and warm. No maintenance is required.

### Thin floor solution!

When renovating a building, it is usually the constructional depth that is the limiting factor. People do not want to have to carry out expensive, time-consuming work such as raising door sills, adapting doors etc.

# Benefits of using MILLIMAT™ - Heating Mat

## Comfortable

The heating mat provides comfortable heat which is evenly distributed throughout the room.

## Affordable

Consisting of only a mat and a thermostat, the heating mat system should be affordable for most house owners. When the heating mat is controlled by an electronic thermostat, the thermostat will react immediately and independently to any temperature change in the room. This ensures a highly energy efficient heating system for your home.

## Easy installation

The mat is just rolled out before the tile adhesive is applied. It is self-adhesive and is attached by pressing it lightly against the base. The mat can easily be adjusted to fit the shape of the room. The cable on the mesh is twin conductor, and no return to the power supply is required. The heating system may be used in any existing room where you want to install tiles.

## Reliable and safe

The mat is designed in accordance with the international standards and safety regulations. It is manufactured in accordance with the quality assurance standard ISO 9001 and the environmental control standard ISO 14001. It is supplied with a product warranty, subject to correct installation and operation. Furthermore, the mat requires no maintenance. The twin conductor cable represents no electrical hazard when properly installed.

## Space saving

The mat doesn't take up any wall space, making it much easier to plan the layout of your room.



# MILLIMAT™ - Heating Mat

Nexans has developed this heating mat for renovation projects. It is ideal for renovation of all types of room, including bathrooms.



MILLIMAT™

## Applications:

MILLIMAT™ – Heating Mat is ideal for both renovation and new building projects. The heating mat consists of a thin twin conductor heating cable element attached to an adhesive flexible glass fibre net. The thin heating cable element is delivered with a 2.5 m cold lead through an integrated splice.

The splice is as thin and robust as the cable itself, and eases installation as it is not necessary to modify the subfloor when placing the splice.

## Two product series are available:

The 100 W/m<sup>2</sup> mat is recommended for living rooms, hallways, kitchens and similar rooms. The mat can be installed on any type of level and stable subfloor.

The 150 W/m<sup>2</sup> mat is recommended for bathrooms, toilets, laundry rooms and other areas requiring high output. The mat must be installed on a solid, level and stable subfloor.

A floor in which heating has been installed during renovation is usually very quick and easy to regulate, because the heating mat is located near the top of the floor construction, resulting in low energy consumption.

The mat is adjusted to the room shape by cutting the net.



## MILLIMAT™

A slim heating cable on a self adhesive glass fibre mesh. The mat is only 4.5 mm thick and is available as 230V, 100 W/m<sup>2</sup> and 230 V, 150 W/m<sup>2</sup>.



## Ideal for all rooms

Tiles, parquet or other wooden floor coverings can be installed in most rooms with a thin floor construction.

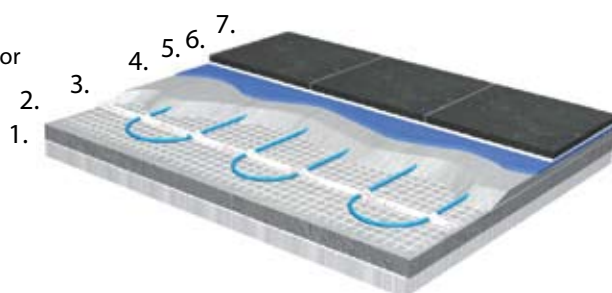


## Easy to install

The mat is easily adapted to the shape of the room and may be installed directly in the tile adhesive.

## Basic solution for MILLIMAT™ floor:

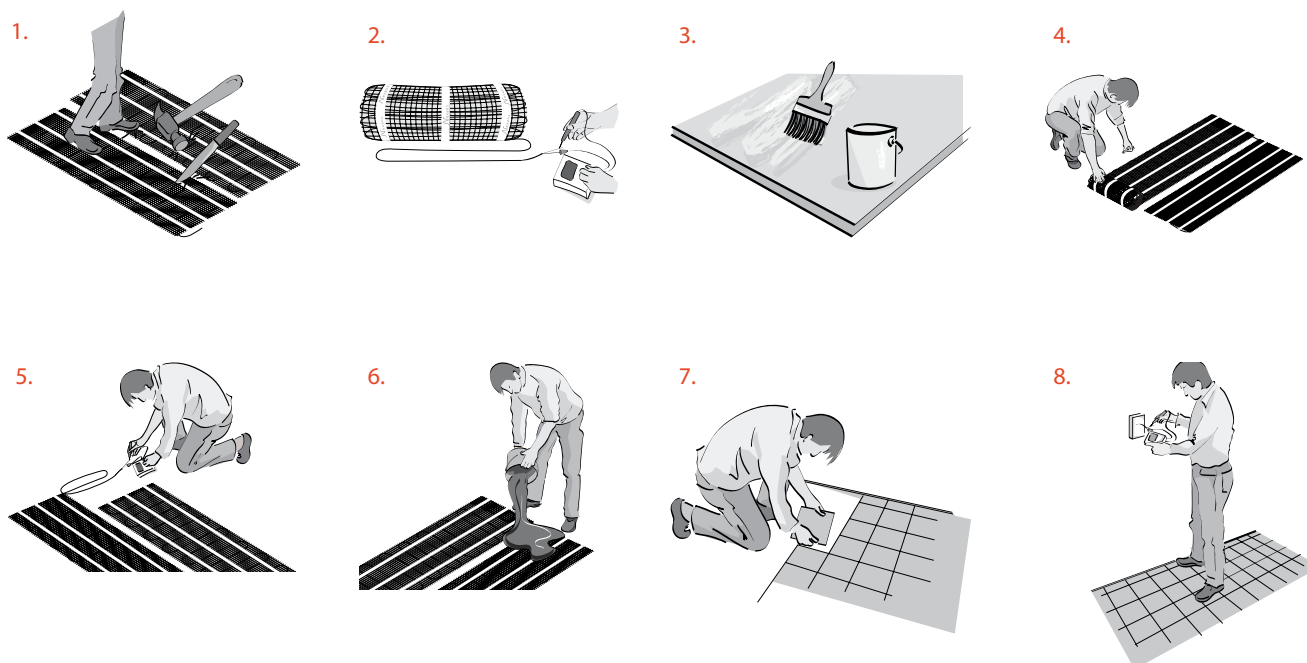
1. Insulation
2. Non combustible sub floor
3. MILLIMAT™
4. Thin screed/slab
5. Membrane
6. Tile adhesive
7. Tiles/floor covering



For our full Nexans product range of heating cable systems and technical details, please visit our heating cable website [www.nexans.com/heating](http://www.nexans.com/heating)



# MILLIMAT™ - Brief guide to installation



## Instructions:

1. Caution! Handle the product with care and do not press or drop sharp objects on the mat.

2. Measure and check the following electrical properties to be within limits before installing the mat:

- The ground insulation between the earth wire and the resistance wires: 100 MOhm or higher.
- The resistance value of the heating element: Within -5/+10% of nominal value.

3. It is recommended to treat the sub floor with a primer so that the mat can be easily fixed to the underlay. Apply the primer with a brush, and leave to dry.

- MILLIMAT™ 100 W/m<sup>2</sup> can be installed on any type of stable and levelled subfloor/underlay.
- MILLIMAT™ 150 W/m<sup>2</sup> must be installed on a non combustible subfloor (levelled and stable) with minimum thickness 5mm.

4. Install and adjust the mat by rolling it out on the subfloor. Caution! When making adjustments: Do not cut the cable, only the net. The mat is self-adhesive, and is fixed by applying a light pressure towards the primed floor. When

cutting and adjusting the mat, ensure that the cables are kept at the same distance from each other as the cables on the mat itself. Make sure that the splice (the connection between cold and hot part of the cable) is placed so the cold lead reaches the thermostat, and that the splice itself is placed in the floor and not inside the wall.

If other cables (which are not a part of the heating cable installation) are embedded in the heated floor these must be placed at least 3 cm (1,2 inches) away from any heating cable. The current-carrying capacity of these cables must be adjusted due to the heated surroundings.

If a floor sensor is used it must be connected at equal distance between two cable strands. It is recommended to install the floor sensor inside a tube, making it possible to replace it in the future.

5. Measure the ground insulation and conductor resistance again before pouring screed/mortar/concrete/adhesive.

6. When embedding use cement-based tile adhesive, thinset mortar, screed or concrete, suitable for heated floors with good heat conductivity. Follow the guidelines given by the manufacturer and ensure that the mat is fully embedded. A thicker layer might be required

to ensure mechanical floor stability, but as a minimum the mat must be covered entirely by the screed/mortar/concrete/adhesive.

## NB!

Use machinery to mix well and pour shortly after mixing. After pouring, compact thoroughly to avoid a porous slab with air pockets.

7. Floor Covering. Some materials are sensitive to heat and are not applicable to install as a part of a heated floor. Please check with the manufacturer of the floor covering whether their product is suitable or not.

MILLIMAT™ 100 W/m<sup>2</sup> can be installed beneath most types of floor covering. That includes wood, laminate, parquet, vinyl, tiles, slate, stone, marble, etc.

MILLIMAT™ 150 W/m<sup>2</sup> must be installed beneath non combustible materials. Examples of such materials are tiles, slate, stone and marble.

8. Measure the ground insulation and conductor resistance again before connecting to the thermostat as a final test.

## IMPORTANT!!

Please follow the detailed installation instructions which are included in the box with the purchased MILLIMAT™.

## New! MILLIMAT™ with hidden splice technology

MILLIMAT™ – 100 W/m<sup>2</sup>

Nexans Code no.	Mat Area	Output	Mat Length	Mat Width	Element Resistance (Ohm)		
	(m <sup>2</sup> )	(W)	(m)	(m)	Min (-5%)	Nominal	Max (+10%)
10143274*	1.0	100	2	0,5	502.6	529.0	581.9
10143276*	1.5	150	3	0,5	335.0	378.9	387.9
10143277*	2.0	200	4	0,5	251.3	291.0	291.0
10143278*	2.5	250	5	0,5	201.0	232.8	232.8
10143279*	3.0	300	6	0.5	167.5	176.3	194.0
10143280*	3.5	350	7	0.5	143.6	151.1	166.3
10167644	4.0	400	8	0.5	125.6	132.3	145.5
10167645	5.0	500	10	0.5	100.5	105.8	116.4
10167646	6.0	600	12	0.5	83.8	88.2	97.0
10167647	7.0	700	14	0.5	71.8	75.6	83.1
10167648	8.0	800	16	0.5	62.8	66.1	72.7
10167649	10.0	1000	20	0.5	50.3	52.9	58.2
10167650	12.0	1200	24	0.5	41.9	44.1	48.5

\* This mat size is not delivered with hidden splice technology.

MILLIMAT™ – 150 W/m<sup>2</sup>

Nexans Code No.	Mat Area	Output	Mat Length	Mat Width	Element Resistance (Ohm)		
	(m <sup>2</sup> )	(W)	(m)	(m)	Min: (-5%)	Nominal	Max: (+10%)
10143308*	1.0	150	2	0.5	335.0	352.7	387.9
10143309*	1.5	225	3	0.5	223.4	235.1	258.9
10143311*	2.0	300	4	0.5	167.5	176.3	194.0
10143312*	2.5	375	5	0.5	134.0	141.1	155.2
10167653	3.0	450	6	0.5	111.7	117.6	129.3
10167654	3.5	525	7	0.5	95.7	100.8	110.8
10167655	4.0	600	8	0.5	83.8	88.2	97.0
10167658	5.0	750	10	0.5	67.0	70.5	77.6
10167659	6.0	900	12	0.5	55.8	58.8	64.7
10167660	7.0	1050	14	0.5	47.9	50.4	55.4
10167661	8.0	1200	16	0.5	41.9	44.1	48.5
10143320*	10.0	1500	20	0.5	33.5	35.3	38.8
10143321*	12.0	1800	24	0.5	27.9	29.4	32.3

\* This mat size is not delivered with hidden splice technology.



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