

DATASHEET: CPM-MONITOR 18/30

THERMAL SHEETS CPM-MONITOR

CPM-Monitors are easy-applicable elements for the detection of heating pipelines which have been covered by screeds or other surfaces. They are especially useful for marking possible sampling points for CM-Measurements, respectively when supplementary drillings are necessary, for the riskless placing of drill holes in screeds.

PREPARATION AND AREA OF APPLICATION

CPM Monitors are immediately applicable. You simply take it out and start. The heating systems have to be in operation, as the sheets can only be used if a surface has a temperature profile. The temperature of the area of application has to be inside the colour changing range of the sheet, if results are to be expected.

The best results show themselves after about 1-2 hours of system operation (with low-temperature systems, the heating pipelines should be in use for at least four hours). The CPM-Monitor will then be placed into position. The floor construction itself doesn't matter. CPM-Monitors can be used on concrete floors as well as other screeds, tiles, parquet or carpets.

Zones which should be analysed with CPM-Monitors need to be determined before:

- If needed for finding sampling locations for CM-Device tests, find the most humid area with a capacitive moisture indicator.
- If for supplementary drillings, use floorplans.

Note: With a waterproof aerosol fixative, sheets can be placed on ceilings and walls. Depending on the type of fixative, the life expectancy of the sheets will be shortened (softener). We advise you to clean the sheet with a moist cloth and letting it dry before packing it away.

APPLICATORY TIPS

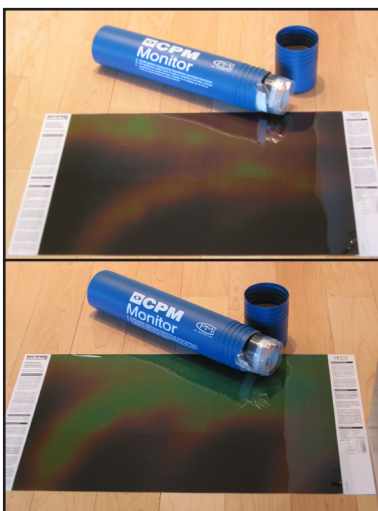
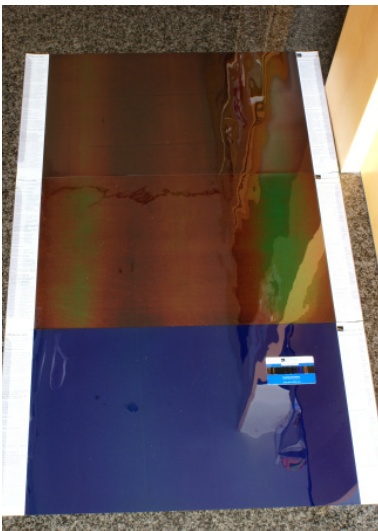
Before using the sheet, use the enclosed floor thermometer to check the momentary floor temperature, and then choose the correct sheet according to the temperature. When the temperature is too high, the complete sheet will appear blue, and no pipes can be seen. (picture to the left).

CPM-Monitors can be immediately used in a different place. There is no need to wait for a steady state to settle in as about 30 seconds later, new pipes can be found by the CPM-Monitors. During the heating phase it can happen that the pipe appear partially or not visibly at all, as no surface temperature profile has been able to establish itself. Especially in the case of return pipes, as they only appear at a later point. All that is left for you to do is to wait. (picture below)

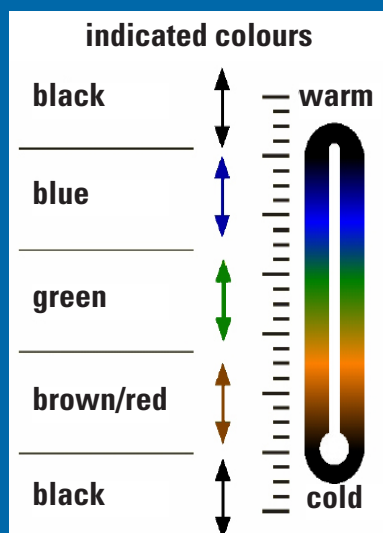
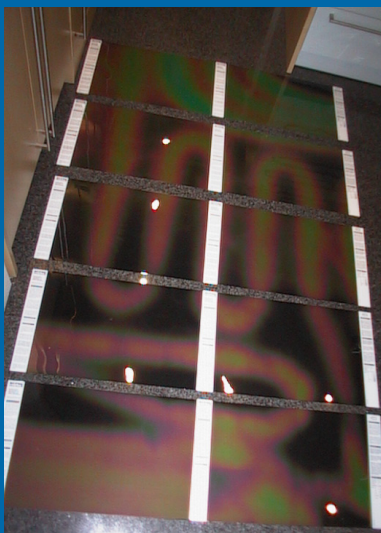
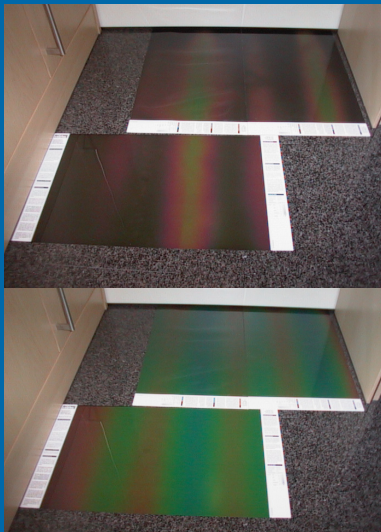
If heating pipes have been in use for a very long time, sheets can seem to appear completely blue (middle picture: Lower sheet), as the temperature profile will be even. If circumstances allow, heating systems should be turned off during the night before a measurement.

You can try one of the three further provisions:

- 1) You can take a preferably uniform, not too thick board (PVC, CV or cardboard of maximum a



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millimeter thickness) and place this on a surface which is to be analysed. On the board a temperature profile will build itself up and you can follow the line system using the correct sheet. Important: before moving the board, it has to be rinsed.

- 2) You move to the sheet to the wall area of a room. If the pipes run frontally to the wall, a wavelike colour change will appear on the sheet. If the pipes run parallel to the wall, the colour change that will appear will be a straight line.
- 3) You can cool down the surface through opening the windows or through the even spraying of water. The areas above a pipe will cool down less quickly than the area between two pipes. Through this, a temperature profile will appear which can be made visible with the correct sheet.

If pipes can't be made visible (for example when the surface is too cold), you overlay a heat source on the CPM-Monitor surface. You see that pipes can suddenly appear. In that way, you can raise the sensitivity of the CPM-Monitors and can apply them to larger temperature gradient. Areas which should be analysed with CPM-Monitors can't be illuminated by the sun (now external warming of the area). Appropriate measures need to be taken (closing of the blinds, sun protection, covering...)

TECHNICAL DATA

Content	Quiverset of 3 sheets including 1 floor thermometer (7 to 33°C)
Temperature range	Sheet 1: 18-22°C / sheet 2: 22-26°C / sheet 3: 26-30°C
Resolution	0.4°C
Usable area	550 x 350mm
Storage temperature	10 bis 50°C
Resistance:	Sheets have no problem when coming into contact with water. UV-rays (for e.g. through sunlight) and heat rays (storage in cars) displacement of the temperature range.

USING MULTIPLE SHEETS AT THE SAME TIME

With the use of multiple sheets of the same temperature range, heating pipelines of larger areas can be chartered at the same time (picture above and middle).

SERVICES NOTES

Handle with care, don't bend or fold. Don't store in direct sunlight (don't leave uncovered in cars). The transporting-quiver alone doesn't provide enough protection from direct sunlight. Always store inside the quiver and not exposed to direct heat sources. Don't place on radiators. Too long exposure to heat can destroy the CPM-Monitors.