



## VARMO FORM

### VARMO FORM Technical Data Sheet

Thermoformed insulating panel

# Contents

|                                |   |
|--------------------------------|---|
| DESCRIPTION                    | 3 |
| ADVANTAGES                     | 3 |
| FIELDS OF APPLICATION          | 4 |
| DIMENSIONAL FEATURES           | 4 |
| PERFORMANCES                   | 5 |
| STRATIGRAPHY                   | 6 |
| PHYSICAL FEATURES              | 7 |
| THERMAL RESISTANCE             | 7 |
| DURABILITY AND FIRE RESISTANCE | 8 |

## Thermoformed insulating panel

**VARMO FORM**

### DESCRIPTION

VARMO FORM insulating panels, made with solid bosses in sintered expanded polystyrene, are ideal for underfloor heating and cooling systems.

The interlocking rigid coating film in HIPS laminated polystyrene acts as a vapor barrier, and gives the bosses mechanical strength; it is also equipped with an undercut to ensure the stable position of the pipe and prevent horizontal and vertical movements.

The installation is facilitated thanks to the lateral overlap with pressure coupling that guarantees a perfect seal against thermal bridges and self-leveling screeds. Designed for applications with pipe diameter 16 and 17 and multiple 50 mm pitch.

It complies with the regulations in force regarding thermal insulation and with UNI EN 13163 of 2009 and UNI EN 1264-4 standards; it has CE marking.

Recommendations: the panel must always be protected from direct sunlight and stored in a dry, ventilated place, away from heat sources and open flames.

### ADVANTAGES

- Quick and easy to install
- Immediate walkability of the floor after installation
- No limitation in the choice of coatings
- Perfect resistance to thermal bridges and self-leveling screeds
- Mechanical strength

## FIELDS OF APPLICATION

| APPLICATIONS                                                                      |                                           |
|-----------------------------------------------------------------------------------|-------------------------------------------|
|  | Underfloor heating                        |
|  | Wet solution                              |
|  | Cement screed (40-45mm above bosses/pipe) |
|  | Self-levelling screed (thickness 20-25mm) |

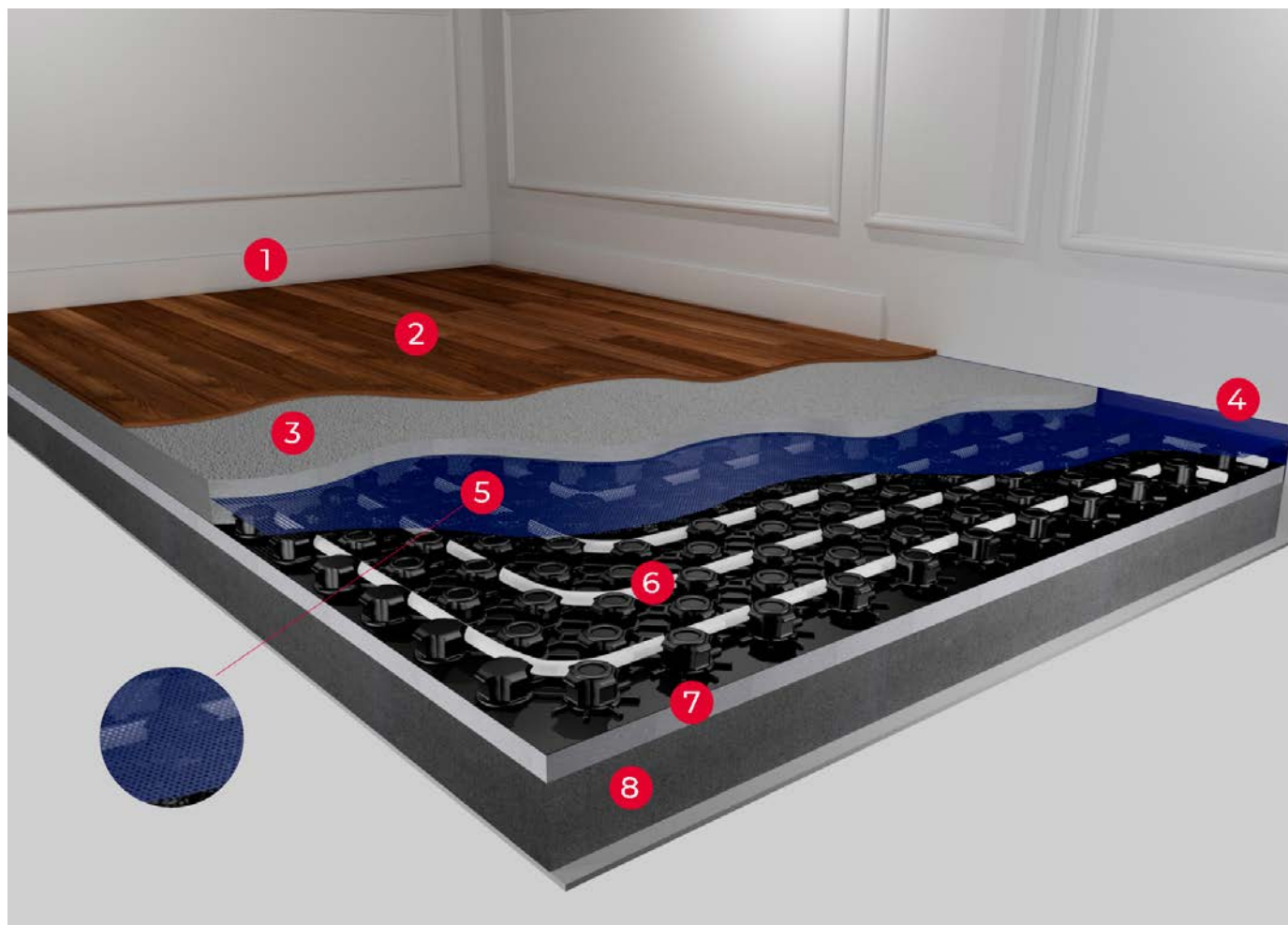
## DIMENSIONAL FEATURES

| Code           | Usable panel dimensions (mm) | Total panel dimensions (mm) | Pcs per pack | Packaging m <sup>2</sup> | Packaging type |
|----------------|------------------------------|-----------------------------|--------------|--------------------------|----------------|
| PI00VFN321022H | 1400x800                     | 1450x850                    | 22           | 24.64                    | cardboard box  |
| PI00VFN422022H | 1400x800                     | 1450x850                    | 16           | 17.92                    | cardboard box  |
| PI00VFN523022H | 1400x800                     | 1450x850                    | 12           | 13.44                    | cardboard box  |
| PI00VFN624022H | 1400x800                     | 1450x850                    | 10           | 11.2                     | cardboard box  |
| PI00VFN725022H | 1400x800                     | 1450x850                    | 8            | 8.96                     | cardboard box  |
| PI00VFN826022H | 1400x800                     | 1450x850                    | 7            | 7.84                     | cardboard box  |

## PERFORMANCES

| Code           | Insulation thickness mm | Embossing height mm | Total panel thickness mm | Panel surface m <sup>2</sup> | Pipe diameter mm |
|----------------|-------------------------|---------------------|--------------------------|------------------------------|------------------|
| PI00VFN321022H | 10                      | 22                  | 32                       | 1.12                         | 16-17            |
| PI00VFN422022H | 20                      | 22                  | 42                       | 1.12                         | 16-17            |
| PI00VFN523022H | 30                      | 22                  | 52                       | 1.12                         | 16-17            |
| PI00VFN624022H | 40                      | 22                  | 62                       | 1.12                         | 16-17            |
| PI00VFN725022H | 50                      | 22                  | 72                       | 1.12                         | 16-17            |
| PI00VFN826022H | 60                      | 22                  | 82                       | 1.12                         | 16-17            |

## STRATIGRAPHY



| LEGEND | DESCRIPTION                 |
|--------|-----------------------------|
| 1      | Skirting                    |
| 2      | Covering                    |
| 3      | Screed                      |
| 4      | Edge Strip                  |
| 5      | Fibreglass mesh             |
| 6      | Pipe                        |
| 7      | Varmo Form insulating panel |
| 8      | Floor slab                  |

## PHYSICAL FEATURES

|                                                                             | Reference standard | EPS / Class     | VARMO FORM (all codes) |
|-----------------------------------------------------------------------------|--------------------|-----------------|------------------------|
| Declared thermal conductivity $\lambda_D$ [W/mK]                            | UNI EN 12667       | 150             | 0.034                  |
| Declared thermal conductivity $\lambda_D$ [W/mK]                            | UNI EN 12667       | 200             | 0.033                  |
| Compressive strenght at 10% strain $\sigma_{10}$ [kPa]                      | UNI EN 826         | 150 / CS(10)150 | 150                    |
| Compressive strenght at 10% strain $\sigma_{10}$ [kPa]                      | UNI EN 826         | 200 / CS(10)200 | 200                    |
| Long-term water absorption WLT [%]                                          | UNI EN 12087       | 150 / WL(T)0,5  | 0.5                    |
| Long-term water absorption WLT [%]                                          | UNI EN 12087       | 200 / WL(T)2,0  | 2                      |
| Tolerance dim. thickness dN [mm]                                            | UNI EN 823         | / T(2)          | $\pm 2$                |
| Dim. stability at 23°C / 50% R.H. $\Delta \epsilon_l$ ; $\Delta \epsilon_d$ | UNI EN 1603        | / DS(N)2        | 0.2                    |
| Water vapour diffusion resistance of EPS $\mu$                              | UNI EN 12086       | 150 / Z 30-70   | 30-70                  |
| Water vapour diffusion resistance of EPS $\mu$                              | UNI EN 12086       | 200 / Z 40-100  | 40-100                 |
| HIPS water vapour diff. res. $\mu$                                          | UNI EN 12086       |                 | 10.000                 |

## THERMAL RESISTANCE

|                | Thermal resistance $R_{\square,ins}$ [m <sup>2</sup> K/W] |
|----------------|-----------------------------------------------------------|
| PI00VFN321022H | 0,3 / EPS 200                                             |
| PI00VFN422022H | 0,59 / EPS 150                                            |
| PI00VFN523022H | 0,88 / EPS 150                                            |
| PI00VFN624022H | 1,18 / EPS 150                                            |
| PI00VFN725022H | 1,47 / EPS 150                                            |
| PI00VFN826022H | 1,76 / EPS 150                                            |

## DURABILITY AND FIRE RESISTANCE

|                                                                             | Reference standard   | VARMO FORM (all codes)                                    |
|-----------------------------------------------------------------------------|----------------------|-----------------------------------------------------------|
| Durability of thermal cond. against heat, atm. agents, degradation, ageing. | UNI EN 13163         | The thermal conductivity of EPS does not change over time |
| Reaction to fire                                                            | EN ISO 11925-2 + EC1 | EUROCLASS - E - UNI EN 13501                              |
| Fire resistance against heat, atmospheric agents, degradation, ageing       | UNI EN 13163         | The fire behaviour of EPS does not change over time       |

S



GENERAL FITTINGS SPA

Via Golgi 73/75, 25064 Gussago (BS) - ITALY

te. +39 030 3739017

[www.generalfittings.it](http://www.generalfittings.it)