

DECLARATION OF PERFORMANCE

No 21.01/R PIR-F

1. Unique identification code of the product-type:

IzoRoof PIR-F

2. Intended use or uses:

Elements of roofing

3. Producent:

IZOPANEL Sp. z o.o.
ul. Budowlanych 36, 80-298 Gdańsk
 Tel.: +48 58 340 17 17, Fax: +48 58 340 17 18, E-mail: info@izopanel.pl

5. System(s) for assessment and verification of constancy of performance:

3

6a. Harmonised standard:

EN 14509:2013 „Self supporting double skin metal faced insulating panels. Factory made products. Specifications.”

Notified body or bodies:

- **Building Research Institute – Notified Body No. 1488**
- **FIRES s.r.o. – Notified Body No. 1396**

7. Declared performance:

| General characteristics | Performance | | | | | | | |
|--|-------------------|---------|------------------|---------|-----------------|---------|------------------|---------|
| Tensile strenght; f_{ct} [MPa] | | | | | | | | |
| 60 -120 | 0,08 | | | | | | | |
| 140 - 160 | 0,07 | | | | | | | |
| Compressive strenght; f_{cc} [MPa] | | | | | | | | |
| 60 -120 | 0,1 | | | | | | | |
| 140 - 160 | 0,09 | | | | | | | |
| Shear strenght; f_{cv} [MPa] | | | | | | | | |
| 60 -120 | 0,1 | | | | | | | |
| 140 - 160 | 0,07 | | | | | | | |
| Creep coefficient; $\varphi_{t=2000h}$ | 1,57 | | | | | | | |
| Creep coefficient; $\varphi_{t=100000h}$ | 2,44 | | | | | | | |
| Long-term shear strenght; f_{cvt} [MPa] | | | | | | | | |
| 60 -120 | 0,04 | | | | | | | |
| 140 - 160 | 0,028 | | | | | | | |
| Shear modulus; G_c [MPa] | | | | | | | | |
| 60 -120 | 2,5 | | | | | | | |
| 140 - 160 | 2,1 | | | | | | | |
| <i>Critical stress [MPa]:</i> | L(line) | | R(groove) | | M(micro) | | E(smooth) | |
| <i>Panel thickness [mm]</i> | 60-120 | 140-160 | 60-120 | 140-160 | 60-120 | 140-160 | 60-120 | 140-160 |
| Int. side - span - ambient temp. | 119 | 72 | 100 | 60 | 85 | 52 | 41 | 25 |
| Int. side - span - increased temp. | 112 | 70 | 94 | 59 | 80 | 50 | 39 | 24 |
| Int. side - support - ambient temp. | 98 | 68 | 82 | 57 | 70 | 49 | 34 | 24 |
| Int. side - support - increased temp. | 93 | 66 | 78 | 55 | 67 | 47 | 32 | 23 |
| | T(trapeze) | | | | | | | |
| Ext. side - span - ambient temp. | 213 | 213 | 213 | 213 | 213 | 213 | 213 | 213 |
| Ext. side - span - increased temp. | 206 | 206 | 206 | 206 | 206 | 206 | 206 | 206 |
| Ext. side - support - ambient temp. | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 250 |
| Ext. side — support — increased temp. | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 250 |
| <i>Bending moment [kNm/m]:</i> | | | | | | | | |
| <i>Panel thickness [mm]</i> | 60 | 80 | 100 | 120 | 140 | 160 | | |
| <i>Line, moment in span, ext. cladding - normal temp.</i> | 6,28 | 8,19 | 10,11 | 12,03 | 13,94 | 15,86 | | |
| <i>Line, moment in span, ext. cladding - increased temp.</i> | 6,07 | 7,92 | 9,78 | 11,63 | 13,49 | 15,34 | | |
| <i>Line, moment in span, int. cladding - normal temp.</i> | 2,81 | 3,66 | 4,52 | 5,38 | 3,77 | 4,29 | | |

| General characteristics | Performance | | | | | |
|--|-----------------|------|-------|-----------------|-------|-------|
| Line, moment in span, int. cladding - increased temp. | 2,64 | 3,45 | 4,25 | 5,06 | 3,67 | 4,17 |
| Line, moment on support, ext. cladding - normal temp. | 7,37 | 9,62 | 11,87 | 14,12 | 16,37 | 18,62 |
| Line, moment on support, ext. cladding - increased temp. | 7,37 | 9,62 | 11,87 | 14,12 | 16,37 | 18,62 |
| Line, moment on support, int. cladding - normal temp. | 2,31 | 3,02 | 3,72 | 4,43 | 3,56 | 4,05 |
| Line, moment on support, int. cladding - increased temp. | 2,19 | 2,86 | 3,53 | 4,20 | 3,46 | 3,93 |
| Groove, moment in span, ext. cladding - normal temp. | 6,28 | 8,19 | 10,11 | 12,03 | 13,94 | 15,86 |
| Groove, moment in span, ext. cladding - increased temp. | 6,07 | 7,92 | 9,78 | 11,63 | 13,49 | 15,34 |
| Groove, moment in span, int. cladding - normal temp. | 2,36 | 3,08 | 3,80 | 4,52 | 3,14 | 3,57 |
| Groove, moment in span, int. cladding - increased temp. | 2,22 | 2,89 | 3,57 | 4,25 | 3,09 | 3,51 |
| Groove, moment in support, ext. cladding - normal temp | 7,37 | 9,62 | 11,87 | 14,12 | 16,37 | 18,62 |
| Groove, moment on support, ext. cladding - increased temp. | 7,37 | 9,62 | 11,87 | 14,12 | 16,37 | 18,62 |
| Groove, moment on support, int. cladding - normal temp | 1,93 | 2,52 | 3,11 | 3,70 | 2,99 | 3,40 |
| Groove, moment on support, int. cladding - increased temp. | 1,84 | 2,40 | 2,96 | 3,52 | 2,88 | 3,28 |
| Micro, moment in span, ext. cladding - normal temp. | 6,28 | 8,19 | 10,11 | 12,03 | 13,94 | 15,86 |
| Micro, moment in span, ext. cladding - increased temp. | 6,07 | 7,92 | 9,78 | 11,63 | 13,49 | 15,34 |
| Micro, moment in span, int. cladding - normal temp. | 2,00 | 2,62 | 3,23 | 3,84 | 2,72 | 3,10 |
| Micro, moment in span, int. cladding - increased temp. | 1,89 | 2,46 | 3,04 | 3,61 | 2,62 | 2,98 |
| Micro, moment on support, ext. cladding - normal temp | 7,37 | 9,62 | 11,87 | 14,12 | 16,37 | 18,62 |
| Micro, moment on support, ext. cladding - increased temp. | 7,37 | 9,62 | 11,87 | 14,12 | 16,37 | 18,62 |
| Micro, moment on support, int. cladding - normal temp | 1,65 | 2,15 | 2,66 | 3,16 | 2,57 | 2,92 |
| Micro, moment on support, int. cladding - increased temp. | 1,58 | 2,06 | 2,54 | 3,03 | 2,46 | 2,80 |
| Smooth, moment in span, ext. cladding - normal temp. | 6,28 | 8,19 | 10,11 | 12,03 | 13,94 | 15,86 |
| Smooth, moment in span, ext. cladding - increased temp | 6,07 | 7,92 | 9,78 | 11,63 | 13,49 | 15,34 |
| Smooth, moment in span, int. cladding - normal temp. | 0,97 | 1,26 | 1,56 | 1,85 | 1,31 | 1,49 |
| Smooth, moment in span, int. cladding - increased temp. | 0,92 | 1,20 | 1,48 | 1,76 | 1,26 | 1,43 |
| Smooth, moment on support, ext. cladding - normal temp. | 7,37 | 9,62 | 11,87 | 14,12 | 16,37 | 18,62 |
| Smooth, moment on support, ext. cladding - increased temp. | 7,37 | 9,62 | 11,87 | 14,12 | 16,37 | 18,62 |
| Smooth, moment on support, int. cladding - normal temp. | 0,80 | 1,05 | 1,29 | 1,54 | 1,26 | 1,43 |
| Smooth, moment on support, int. cladding - increased temp. | 0,75 | 0,98 | 1,22 | 1,45 | 1,20 | 1,37 |
| Panel thickness [mm] | 60 | 80 | 100 | 120 | 140 | 160 |
| Thermal conductivity; U | 0,34 | 0,26 | 0,21 | 0,17 | 0,15 | 0,13 |
| Thermal conductivity coefficient [$\lambda_{\text{declared}}$] | 0,021 | | | | | |
| Impact of external fire– roofs[B _{roof}] | Roof | | | | | |
| Reaction to fire [panel thickness in mm]: | | | | | | |
| 60 -160 | B-s1,d0 | | | | | |
| Resistance to fire [panel thickness in mm] | | | | | | |
| 60 -120 | NPD | | | | | |
| 140 - 160 | REI 30 | | | | | |
| Water permeability | NPD | | | | | |
| Air permeability | thrust | | | suction | | |
| | n=0,664 c=0,109 | | | n=0,449 c=0,166 | | |
| Steam permeability | NPD | | | | | |
| Specific acoustic resistance; R _w (C,C _{tr}) [dB] | | | | | | |
| 60-120 | 26(-2,-5) | | | | | |
| 140-160 | NPD | | | | | |
| Acoustic absorption; α_w | | | | | | |
| 60-120 | 0,15 | | | | | |
| 140-160 | NPD | | | | | |
| Dimensional tolerances | Fulfills | | | | | |
| Durability | Fulfills | | | | | |
| Hazardous substances | NPD | | | | | |

Web address where this Declaration of Performance is made available:

Performance of the above product is in compliance with Declared Performance Package. This Declaration of Performance is issued, in accordance with Regulation (EU) no. 305/2011, at the sole responsibility of the manufacturer as indicated above.

On behalf of the manufacturer signed by:

Karol Pawłowski

(full name)

Gdańsk, dnia 21.12.2021

(place and date)



(signature)