

# Declaration of Performance

## R4224IPCPR

1. Unique identification code of the product-type:  
S, SK, SKG, DDP N, DDP RT, SmartRoof Top, NaturBoard FIT, NaturBoard FIT-G, FKL Thermal, Smart Roof TOP CTF1, Smart Roof TOP CTF2, Board D3, Board D13, Board D14, Board D15, Board D16, Board D17
2. Intended use or uses:  
Thermal Insulation for Buildings (ThIB)
3. Manufacturer:  
Knauf Insulation d.o.o.  
Industrijsko naselje Belo Polje bb, 17530 Surdulica  
Serbia  
www.knaufinsulation.com - dop@knaufinsulation.com
4. Authorised representative:  
Not applicable
5. System or systems of assessment and verification of constancy of performance:  
AVCP System 1 for Reaction to Fire  
AVCP System 3 for the other characteristics
- 6a. Harmonized Standard:  
  
EN 13162:2012 + A1:2015  
  
Notified body or bodies:  
AVCP System 1: (Notified certification body) 0751 - Forschungsinstitut für Wärmeschutz e. V. München  
FIW München 1404 - ZAG - ZAVOD ZA GRADBENISTVO SLOVENIJE  
  
AVCP System 3: (Notified testing laboratory) 0751 - Forschungsinstitut für Wärmeschutz e. V. München  
FIW München - - - - -
- 6b. European Assessment document: not applicable  
European Technical Assessment: not applicable  
Technical Assessment Body: not applicable  
Notified body/ies: not applicable
7. Declared Performances:  
See next page

| Essential Characteristics   | R4224IPCPR  |                       | Harmonised technical standard |
|---|---|-----------------------|-------------------------------|
|   | Performance {f}   | Board D13             |                               |
| Thermal Resistance  | Thermal conductivity (W/mK)   | $\lambda_D$ 0,038     | EN 13162:2012 + A1:2015       |
|   | Thermal Resistance  | See performance chart |                               |
|   | Thickness range (mm)  | 20 - 200              |                               |
|   | Thickness tolerance   | T5                    |                               |
| Reaction to Fire  | Reaction to fire  | A1                    |                               |
| Durability of reaction to fire against heat, weathering, ageing / degradation   | Durability Characteristics  | NPD {a}               |                               |
| Durability of thermal resistance against heat, weathering, ageing / degradation | Thermal Resistance  | NPD{b}                |                               |
|   | Thermal conductivity  | NPD                   |                               |
|   | Durability characteristics  | NPD {c}               |                               |
| Compressive Strength  | Compressive Stress / Compressive Strength                           | NPD                   |                               |
|   | Point Load  | NPD                   |                               |
| Tensile / Flexural strength   | Tensile strength perpendicular faces                                | NPD {d}               |                               |
| Durability of compressive Strength against ageing / degradation                 | Compressive creep   | NPD                   |                               |
| Water Permeability  | Short term water absorption   | NPD                   |                               |
|   | Long term water absorption  | NPD                   |                               |
| Water vapour permeability   | Water vapour transmission, water vapour diffusion resistance factor | NPD                   |                               |
| Impact noise transmissions index (for floors)                                   | Dynamic stiffness   | NPD                   |                               |
|   | Thickness   | NPD                   |                               |
|   | Compressibility   | NPD                   |                               |
|   | Air flow resistivity  | NPD                   |                               |
| Acoustic absorptions index  | Sound absorption  | NPD                   |                               |
| Direct airborne sound insulation index  | Air flow resistivity  | AF5                   |                               |
| Release of dangerous substances to the indoor environment                       | Release of dangerous substances                                     | NPD {e}               |                               |
| Continuous glowing combustion   | Continuous glowing combustion                                       | NPD {e}               |                               |
| NPD - No performance determined   |   |                       |                               |

| Essential Characteristics   | R4224IPCPR  |                       | Harmonised technical standard |
|---|---|-----------------------|-------------------------------|
|   | Performance<br>{f}  | Board D14             |                               |
| Thermal Resistance  | Thermal conductivity (W/mK)   | $\lambda_D$ 0,038     | EN 13162:2012 + A1:2015       |
|   | Thermal Resistance  | See performance chart |                               |
|   | Thickness range (mm)  | 20 - 200              |                               |
|   | Thickness tolerance   | T5                    |                               |
| Reaction to Fire  | Reaction to fire  | A1                    |                               |
| Durability of reaction to fire against heat, weathering, ageing / degradation   | Durability Characteristics  | NPD {a}               |                               |
| Durability of thermal resistance against heat, weathering, ageing / degradation | Thermal Resistance  | NPD{b}                |                               |
|   | Thermal conductivity  | NPD                   |                               |
|   | Durability characteristics  | NPD {c}               |                               |
| Compressive Strength  | Compressive Stress / Compressive Strength                           | NPD                   |                               |
|   | Point Load  | NPD                   |                               |
| Tensile / Flexural strength   | Tensile strength perpendicular faces                                | NPD {d}               |                               |
| Durability of compressive Strength against ageing / degradation                 | Compressive creep   | NPD                   |                               |
| Water Permeability  | Short term water absorption   | NPD                   |                               |
|   | Long term water absorption  | NPD                   |                               |
| Water vapour permeability   | Water vapour transmission, water vapour diffusion resistance factor | NPD                   |                               |
| Impact noise transmissions index (for floors)                                   | Dynamic stiffness   | NPD                   |                               |
|   | Thickness   | NPD                   |                               |
|   | Compressibility   | NPD                   |                               |
|   | Air flow resistivity  | NPD                   |                               |
| Acoustic absorptions index  | Sound absorption  | NPD                   |                               |
| Direct airborne sound insulation index  | Air flow resistivity  | AF5                   |                               |
| Release of dangerous substances to the indoor environment                       | Release of dangerous substances                                     | NPD {e}               |                               |
| Continuous glowing combustion   | Continuous glowing combustion                                       | NPD {e}               |                               |
| NPD - No performance determined   |   |                       |                               |

| Essential Characteristics   | R4224IPCPR  |                       | Harmonised technical standard |
|---|---|-----------------------|-------------------------------|
|   | Performance {f}   | Board D15             |                               |
| Thermal Resistance  | Thermal conductivity (W/mK)   | $\lambda_D$ 0,038     | EN 13162:2012 + A1:2015       |
|   | Thermal Resistance  | See performance chart |                               |
|   | Thickness range (mm)  | 20 - 200              |                               |
|   | Thickness tolerance   | T5                    |                               |
| Reaction to Fire  | Reaction to fire  | A1                    |                               |
| Durability of reaction to fire against heat, weathering, ageing / degradation   | Durability Characteristics  | NPD {a}               |                               |
| Durability of thermal resistance against heat, weathering, ageing / degradation | Thermal Resistance  | NPD{b}                |                               |
|   | Thermal conductivity  | NPD                   |                               |
|   | Durability characteristics  | NPD {c}               |                               |
| Compressive Strength  | Compressive Stress / Compressive Strength                           | NPD                   |                               |
|   | Point Load  | NPD                   |                               |
| Tensile / Flexural strength   | Tensile strength perpendicular faces                                | NPD {d}               |                               |
| Durability of compressive Strength against ageing / degradation                 | Compressive creep   | NPD                   |                               |
| Water Permeability  | Short term water absorption   | NPD                   |                               |
|   | Long term water absorption  | NPD                   |                               |
| Water vapour permeability   | Water vapour transmission, water vapour diffusion resistance factor | NPD                   |                               |
| Impact noise transmissions index (for floors)                                   | Dynamic stiffness   | NPD                   |                               |
|   | Thickness   | NPD                   |                               |
|   | Compressibility   | NPD                   |                               |
|   | Air flow resistivity  | NPD                   |                               |
| Acoustic absorptions index  | Sound absorption  | NPD                   |                               |
| Direct airborne sound insulation index  | Air flow resistivity  | AF5                   |                               |
| Release of dangerous substances to the indoor environment                       | Release of dangerous substances                                     | NPD {e}               |                               |
| Continuous glowing combustion   | Continuous glowing combustion                                       | NPD {e}               |                               |
| NPD - No performance determined   |   |                       |                               |

| Essential Characteristics   | R4224IPCPR  |                       | Harmonised technical standard |
|---|---|-----------------------|-------------------------------|
|   | Performance<br>{f}  | Board D16             |                               |
| Thermal Resistance  | Thermal conductivity (W/mK)   | $\lambda_D$ 0,038     | EN 13162:2012 + A1:2015       |
|   | Thermal Resistance  | See performance chart |                               |
|   | Thickness range (mm)  | 20 - 200              |                               |
|   | Thickness tolerance   | T5                    |                               |
| Reaction to Fire  | Reaction to fire  | A1                    |                               |
| Durability of reaction to fire against heat, weathering, ageing / degradation   | Durability Characteristics  | NPD {a}               |                               |
| Durability of thermal resistance against heat, weathering, ageing / degradation | Thermal Resistance  | NPD{b}                |                               |
|   | Thermal conductivity  | NPD                   |                               |
|   | Durability characteristics  | NPD {c}               |                               |
| Compressive Strength  | Compressive Stress / Compressive Strength                           | NPD                   |                               |
|   | Point Load  | NPD                   |                               |
| Tensile / Flexural strength   | Tensile strength perpendicular faces                                | NPD {d}               |                               |
| Durability of compressive Strength against ageing / degradation                 | Compressive creep   | NPD                   |                               |
| Water Permeability  | Short term water absorption   | NPD                   |                               |
|   | Long term water absorption  | NPD                   |                               |
| Water vapour permeability   | Water vapour transmission, water vapour diffusion resistance factor | NPD                   |                               |
| Impact noise transmissions index (for floors)                                   | Dynamic stiffness   | NPD                   |                               |
|   | Thickness   | NPD                   |                               |
|   | Compressibility   | NPD                   |                               |
|   | Air flow resistivity  | NPD                   |                               |
| Acoustic absorptions index  | Sound absorption  | NPD                   |                               |
| Direct airborne sound insulation index  | Air flow resistivity  | AF5                   |                               |
| Release of dangerous substances to the indoor environment                       | Release of dangerous substances                                     | NPD {e}               |                               |
| Continuous glowing combustion   | Continuous glowing combustion                                       | NPD {e}               |                               |
| NPD - No performance determined   |   |                       |                               |

| Essential Characteristics   | R4224IPCPR  |                       | Harmonised technical standard |
|---|---|-----------------------|-------------------------------|
|   | Performance<br>{f}  | Board D17             |                               |
| Thermal Resistance  | Thermal conductivity (W/mK)   | $\lambda_D$ 0,038     | EN 13162:2012 + A1:2015       |
|   | Thermal Resistance  | See performance chart |                               |
|   | Thickness range (mm)  | 20 - 200              |                               |
|   | Thickness tolerance   | T5                    |                               |
| Reaction to Fire  | Reaction to fire  | A1                    |                               |
| Durability of reaction to fire against heat, weathering, ageing / degradation   | Durability Characteristics  | NPD {a}               |                               |
| Durability of thermal resistance against heat, weathering, ageing / degradation | Thermal Resistance  | NPD{b}                |                               |
|   | Thermal conductivity  | NPD                   |                               |
|   | Durability characteristics  | NPD {c}               |                               |
| Compressive Strength  | Compressive Stress / Compressive Strength                           | NPD                   |                               |
|   | Point Load  | NPD                   |                               |
| Tensile / Flexural strength   | Tensile strength perpendicular faces                                | NPD {d}               |                               |
| Durability of compressive Strength against ageing / degradation                 | Compressive creep   | NPD                   |                               |
| Water Permeability  | Short term water absorption   | NPD                   |                               |
|   | Long term water absorption  | NPD                   |                               |
| Water vapour permeability   | Water vapour transmission, water vapour diffusion resistance factor | NPD                   |                               |
| Impact noise transmissions index (for floors)                                   | Dynamic stiffness   | NPD                   |                               |
|   | Thickness   | NPD                   |                               |
|   | Compressibility   | NPD                   |                               |
|   | Air flow resistivity  | NPD                   |                               |
| Acoustic absorptions index  | Sound absorption  | NPD                   |                               |
| Direct airborne sound insulation index  | Air flow resistivity  | AF5                   |                               |
| Release of dangerous substances to the indoor environment                       | Release of dangerous substances                                     | NPD {e}               |                               |
| Continuous glowing combustion   | Continuous glowing combustion                                       | NPD {e}               |                               |
| NPD - No performance determined   |   |                       |                               |

| Essential Characteristics   | R4224IPCPR  |                       | Harmonised technical standard |
|---|---|-----------------------|-------------------------------|
|   | Performance {f}   | Board D3              |                               |
| Thermal Resistance  | Thermal conductivity (W/mK)   | $\lambda_D$ 0,038     | EN 13162:2012 + A1:2015       |
|   | Thermal Resistance  | See performance chart |                               |
|   | Thickness range (mm)  | 20 - 200              |                               |
|   | Thickness tolerance   | T5                    |                               |
| Reaction to Fire  | Reaction to fire  | A1                    |                               |
| Durability of reaction to fire against heat, weathering, ageing / degradation   | Durability Characteristics  | NPD {a}               |                               |
| Durability of thermal resistance against heat, weathering, ageing / degradation | Thermal Resistance  | NPD{b}                |                               |
|   | Thermal conductivity  | NPD                   |                               |
|   | Durability characteristics  | NPD {c}               |                               |
| Compressive Strength  | Compressive Stress / Compressive Strength                           | NPD                   |                               |
|   | Point Load  | NPD                   |                               |
| Tensile / Flexural strength   | Tensile strength perpendicular faces                                | NPD {d}               |                               |
| Durability of compressive Strength against ageing / degradation                 | Compressive creep   | NPD                   |                               |
| Water Permeability  | Short term water absorption   | NPD                   |                               |
|   | Long term water absorption  | NPD                   |                               |
| Water vapour permeability   | Water vapour transmission, water vapour diffusion resistance factor | NPD                   |                               |
| Impact noise transmissions index (for floors)                                   | Dynamic stiffness   | NPD                   |                               |
|   | Thickness   | NPD                   |                               |
|   | Compressibility   | NPD                   |                               |
|   | Air flow resistivity  | NPD                   |                               |
| Acoustic absorptions index  | Sound absorption  | NPD                   |                               |
| Direct airborne sound insulation index  | Air flow resistivity  | AF5                   |                               |
| Release of dangerous substances to the indoor environment                       | Release of dangerous substances                                     | NPD {e}               |                               |
| Continuous glowing combustion   | Continuous glowing combustion                                       | NPD {e}               |                               |
| NPD - No performance determined   |   |                       |                               |

| Essential Characteristics   | R4224IPCPR  |                       | Harmonised technical standard |
|---|---|-----------------------|-------------------------------|
|   | Performance {f}   | DDP N                 |                               |
| Thermal Resistance  | Thermal conductivity (W/mK)   | $\lambda_D$ 0,038     | EN 13162:2012 + A1:2015       |
|   | Thermal Resistance  | See performance chart |                               |
|   | Thickness range (mm)  | 20 - 30   40 - 200    |                               |
|   | Thickness tolerance   | T5   T5               |                               |
| Reaction to Fire  | Reaction to fire  | A1   A1               |                               |
| Durability of reaction to fire against heat, weathering, ageing / degradation   | Durability Characteristics  | NPD {a}               |                               |
| Durability of thermal resistance against heat, weathering, ageing / degradation | Thermal Resistance  | NPD{b}                |                               |
|   | Thermal conductivity  | NPD                   |                               |
|   | Durability characteristics  | NPD {c}               |                               |
| Compressive Strength  | Compressive Stress / Compressive Strength                           | NPD   CS(10)40        |                               |
|   | Point Load  | NPD   PL(5)350        |                               |
| Tensile / Flexural strength   | Tensile strength perpendicular faces                                | NPD   TR7,5 {d}       |                               |
| Durability of compressive Strength against ageing / degradation                 | Compressive creep   | NPD                   |                               |
| Water Permeability  | Short term water absorption   | NPD                   |                               |
|   | Long term water absorption  | NPD                   |                               |
| Water vapour permeability   | Water vapour transmission, water vapour diffusion resistance factor | NPD                   |                               |
| Impact noise transmissions index (for floors)                                   | Dynamic stiffness   | NPD                   |                               |
|   | Thickness   | NPD                   |                               |
|   | Compressibility   | NPD                   |                               |
|   | Air flow resistivity  | NPD                   |                               |
| Acoustic absorptions index  | Sound absorption  | NPD                   |                               |
| Direct airborne sound insulation index  | Air flow resistivity  | NPD                   |                               |
| Release of dangerous substances to the indoor environment                       | Release of dangerous substances                                     | NPD {e}               |                               |
| Continuous glowing combustion   | Continuous glowing combustion                                       | NPD {e}               |                               |
| NPD - No performance determined   |   |                       |                               |

| Essential Characteristics   | R4224IPCPR  |                       | Harmonised technical standard |
|---|---|-----------------------|-------------------------------|
|   | Performance<br>{f}  | DDP RT                |                               |
| Thermal Resistance  | Thermal conductivity (W/mK)   | $\lambda_D$ 0,038     | EN 13162:2012 + A1:2015       |
|   | Thermal Resistance  | See performance chart |                               |
|   | Thickness range (mm)  | 50 - 200              |                               |
|   | Thickness tolerance   | T5                    |                               |
| Reaction to Fire  | Reaction to fire  | A1                    |                               |
| Durability of reaction to fire against heat, weathering, ageing / degradation   | Durability Characteristics  | NPD {a}               |                               |
| Durability of thermal resistance against heat, weathering, ageing / degradation | Thermal Resistance  | NPD{b}                |                               |
|   | Thermal conductivity  | NPD                   |                               |
|   | Durability characteristics  | NPD {c}               |                               |
| Compressive Strength  | Compressive Stress / Compressive Strength                           | CS(10)50              |                               |
|   | Point Load  | PL(5)500              |                               |
| Tensile / Flexural strength   | Tensile strength perpendicular faces                                | TR10 {d}              |                               |
| Durability of compressive Strength against ageing / degradation                 | Compressive creep   | NPD                   |                               |
| Water Permeability  | Short term water absorption   | NPD                   |                               |
|   | Long term water absorption  | NPD                   |                               |
| Water vapour permeability   | Water vapour transmission, water vapour diffusion resistance factor | NPD                   |                               |
| Impact noise transmissions index (for floors)                                   | Dynamic stiffness   | NPD                   |                               |
|   | Thickness   | NPD                   |                               |
|   | Compressibility   | NPD                   |                               |
|   | Air flow resistivity  | NPD                   |                               |
| Acoustic absorptions index  | Sound absorption  | NPD                   |                               |
| Direct airborne sound insulation index  | Air flow resistivity  | NPD                   |                               |
| Release of dangerous substances to the indoor environment                       | Release of dangerous substances                                     | NPD {e}               |                               |
| Continuous glowing combustion   | Continuous glowing combustion                                       | NPD {e}               |                               |
| NPD - No performance determined   |   |                       |                               |

| Essential Characteristics   | R4224IPCPR  |                       | Harmonised technical standard |
|---|---|-----------------------|-------------------------------|
|   | Performance {f}   | FKL Thermal           |                               |
| Thermal Resistance  | Thermal conductivity (W/mK)   | $\lambda_D$ 0,038     | EN 13162:2012 + A1:2015       |
|   | Thermal Resistance  | See performance chart |                               |
|   | Thickness range (mm)  | 40 - 200              |                               |
|   | Thickness tolerance   | T5                    |                               |
| Reaction to Fire  | Reaction to fire  | A1                    |                               |
| Durability of reaction to fire against heat, weathering, ageing / degradation   | Durability Characteristics  | NPD {a}               |                               |
| Durability of thermal resistance against heat, weathering, ageing / degradation | Thermal Resistance  | NPD{b}                |                               |
|   | Thermal conductivity  | NPD                   |                               |
|   | Durability characteristics  | NPD {c}               |                               |
| Compressive Strength  | Compressive Stress / Compressive Strength                           | CS(10)40              |                               |
|   | Point Load  | NPD                   |                               |
| Tensile / Flexural strength   | Tensile strength perpendicular faces                                | TR80 {d}              |                               |
| Durability of compressive Strength against ageing / degradation                 | Compressive creep   | NPD                   |                               |
| Water Permeability  | Short term water absorption   | NPD                   |                               |
|   | Long term water absorption  | NPD                   |                               |
| Water vapour permeability   | Water vapour transmission, water vapour diffusion resistance factor | NPD                   |                               |
| Impact noise transmissions index (for floors)                                   | Dynamic stiffness   | NPD                   |                               |
|   | Thickness   | NPD                   |                               |
|   | Compressibility   | NPD                   |                               |
|   | Air flow resistivity  | NPD                   |                               |
| Acoustic absorptions index  | Sound absorption  | NPD                   |                               |
| Direct airborne sound insulation index  | Air flow resistivity  | NPD                   |                               |
| Release of dangerous substances to the indoor environment                       | Release of dangerous substances                                     | NPD {e}               |                               |
| Continuous glowing combustion   | Continuous glowing combustion                                       | NPD {e}               |                               |
| NPD - No performance determined   |   |                       |                               |

| Essential Characteristics   | R4224IPCPR  |                       | Harmonised technical standard |
|---|---|-----------------------|-------------------------------|
|   | Performance {f}   | NaturBoard FIT        |                               |
| Thermal Resistance  | Thermal conductivity (W/mK)   | $\lambda_D$ 0,038     | EN 13162:2012 + A1:2015       |
|   | Thermal Resistance  | See performance chart |                               |
|   | Thickness range (mm)  | 20 - 200              |                               |
|   | Thickness tolerance   | T5                    |                               |
| Reaction to Fire  | Reaction to fire  | A1                    |                               |
| Durability of reaction to fire against heat, weathering, ageing / degradation   | Durability Characteristics  | NPD {a}               |                               |
| Durability of thermal resistance against heat, weathering, ageing / degradation | Thermal Resistance  | NPD{b}                |                               |
|   | Thermal conductivity  | NPD                   |                               |
|   | Durability characteristics  | NPD {c}               |                               |
| Compressive Strength  | Compressive Stress / Compressive Strength                           | NPD                   |                               |
|   | Point Load  | NPD                   |                               |
| Tensile / Flexural strength   | Tensile strength perpendicular faces                                | NPD {d}               |                               |
| Durability of compressive Strength against ageing / degradation                 | Compressive creep   | NPD                   |                               |
| Water Permeability  | Short term water absorption   | WS                    |                               |
|   | Long term water absorption  | WL(P)                 |                               |
| Water vapour permeability   | Water vapour transmission, water vapour diffusion resistance factor | NPD                   |                               |
| Impact noise transmissions index (for floors)                                   | Dynamic stiffness   | NPD                   |                               |
|   | Thickness   | NPD                   |                               |
|   | Compressibility   | NPD                   |                               |
|   | Air flow resistivity  | NPD                   |                               |
| Acoustic absorptions index  | Sound absorption  | NPD                   |                               |
| Direct airborne sound insulation index  | Air flow resistivity  | AF5                   |                               |
| Release of dangerous substances to the indoor environment                       | Release of dangerous substances                                     | NPD {e}               |                               |
| Continuous glowing combustion   | Continuous glowing combustion                                       | NPD {e}               |                               |
| NPD - No performance determined   |   |                       |                               |

| Essential Characteristics   | R4224IPCPR  |                       | Harmonised technical standard |
|---|---|-----------------------|-------------------------------|
|   | Performance {f}   | NaturBoard FIT-G      |                               |
| Thermal Resistance  | Thermal conductivity (W/mK)   | $\lambda_D$ 0,038     | EN 13162:2012 + A1:2015       |
|   | Thermal Resistance  | See performance chart |                               |
|   | Thickness range (mm)  | 20 - 200              |                               |
|   | Thickness tolerance   | T5                    |                               |
| Reaction to Fire  | Reaction to fire  | A1                    |                               |
| Durability of reaction to fire against heat, weathering, ageing / degradation   | Durability Characteristics  | NPD {a}               |                               |
| Durability of thermal resistance against heat, weathering, ageing / degradation | Thermal Resistance  | NPD{b}                |                               |
|   | Thermal conductivity  | NPD                   |                               |
|   | Durability characteristics  | NPD {c}               |                               |
| Compressive Strength  | Compressive Stress / Compressive Strength                           | NPD                   |                               |
|   | Point Load  | NPD                   |                               |
| Tensile / Flexural strength   | Tensile strength perpendicular faces                                | NPD {d}               |                               |
| Durability of compressive Strength against ageing / degradation                 | Compressive creep   | NPD                   |                               |
| Water Permeability  | Short term water absorption   | WS                    |                               |
|   | Long term water absorption  | WL(P)                 |                               |
| Water vapour permeability   | Water vapour transmission, water vapour diffusion resistance factor | NPD                   |                               |
| Impact noise transmissions index (for floors)                                   | Dynamic stiffness   | NPD                   |                               |
|   | Thickness   | NPD                   |                               |
|   | Compressibility   | NPD                   |                               |
|   | Air flow resistivity  | NPD                   |                               |
| Acoustic absorptions index  | Sound absorption  | NPD                   |                               |
| Direct airborne sound insulation index  | Air flow resistivity  | AF5                   |                               |
| Release of dangerous substances to the indoor environment                       | Release of dangerous substances                                     | NPD {e}               |                               |
| Continuous glowing combustion   | Continuous glowing combustion                                       | NPD {e}               |                               |
| NPD - No performance determined   |   |                       |                               |

| Essential Characteristics   | R4224IPCPR  |                       | Harmonised technical standard |
|---|---|-----------------------|-------------------------------|
|   | Performance {f}   | S                     |                               |
| Thermal Resistance  | Thermal conductivity (W/mK)   | $\lambda_D$ 0,038     | EN 13162:2012 + A1:2015       |
|   | Thermal Resistance  | See performance chart |                               |
|   | Thickness range (mm)  | 20 - 200              |                               |
|   | Thickness tolerance   | T5                    |                               |
| Reaction to Fire  | Reaction to fire  | A1                    |                               |
| Durability of reaction to fire against heat, weathering, ageing / degradation   | Durability Characteristics  | NPD {a}               |                               |
| Durability of thermal resistance against heat, weathering, ageing / degradation | Thermal Resistance  | NPD{b}                |                               |
|   | Thermal conductivity  | NPD                   |                               |
|   | Durability characteristics  | NPD {c}               |                               |
| Compressive Strength  | Compressive Stress / Compressive Strength                           | NPD                   |                               |
|   | Point Load  | NPD                   |                               |
| Tensile / Flexural strength   | Tensile strength perpendicular faces                                | NPD {d}               |                               |
| Durability of compressive Strength against ageing / degradation                 | Compressive creep   | NPD                   |                               |
| Water Permeability  | Short term water absorption   | WS                    |                               |
|   | Long term water absorption  | WL(P)                 |                               |
| Water vapour permeability   | Water vapour transmission, water vapour diffusion resistance factor | NPD                   |                               |
| Impact noise transmissions index (for floors)                                   | Dynamic stiffness   | NPD                   |                               |
|   | Thickness   | NPD                   |                               |
|   | Compressibility   | NPD                   |                               |
|   | Air flow resistivity  | NPD                   |                               |
| Acoustic absorptions index  | Sound absorption  | NPD                   |                               |
| Direct airborne sound insulation index  | Air flow resistivity  | AF5                   |                               |
| Release of dangerous substances to the indoor environment                       | Release of dangerous substances                                     | NPD {e}               |                               |
| Continuous glowing combustion   | Continuous glowing combustion                                       | NPD {e}               |                               |
| NPD - No performance determined   |   |                       |                               |

| Essential Characteristics   | R4224IPCPR  |                       | Harmonised technical standard |
|---|---|-----------------------|-------------------------------|
|   | Performance {f}   | SK                    |                               |
| Thermal Resistance  | Thermal conductivity (W/mK)   | $\lambda_D$ 0,038     | EN 13162:2012 + A1:2015       |
|   | Thermal Resistance  | See performance chart |                               |
|   | Thickness range (mm)  | 20 - 200              |                               |
|   | Thickness tolerance   | T5                    |                               |
| Reaction to Fire  | Reaction to fire  | A1                    |                               |
| Durability of reaction to fire against heat, weathering, ageing / degradation   | Durability Characteristics  | NPD {a}               |                               |
| Durability of thermal resistance against heat, weathering, ageing / degradation | Thermal Resistance  | NPD{b}                |                               |
|   | Thermal conductivity  | NPD                   |                               |
|   | Durability characteristics  | NPD {c}               |                               |
| Compressive Strength  | Compressive Stress / Compressive Strength                           | NPD                   |                               |
|   | Point Load  | NPD                   |                               |
| Tensile / Flexural strength   | Tensile strength perpendicular faces                                | NPD {d}               |                               |
| Durability of compressive Strength against ageing / degradation                 | Compressive creep   | NPD                   |                               |
| Water Permeability  | Short term water absorption   | WS                    |                               |
|   | Long term water absorption  | WL(P)                 |                               |
| Water vapour permeability   | Water vapour transmission, water vapour diffusion resistance factor | NPD                   |                               |
| Impact noise transmissions index (for floors)                                   | Dynamic stiffness   | NPD                   |                               |
|   | Thickness   | NPD                   |                               |
|   | Compressibility   | NPD                   |                               |
|   | Air flow resistivity  | NPD                   |                               |
| Acoustic absorptions index  | Sound absorption  | NPD                   |                               |
| Direct airborne sound insulation index  | Air flow resistivity  | AF5                   |                               |
| Release of dangerous substances to the indoor environment                       | Release of dangerous substances                                     | NPD {e}               |                               |
| Continuous glowing combustion   | Continuous glowing combustion                                       | NPD {e}               |                               |
| NPD - No performance determined   |   |                       |                               |

| Essential Characteristics   | R4224IPCPR  |                       | Harmonised technical standard |
|---|---|-----------------------|-------------------------------|
|   | Performance {f}   | SKG                   |                               |
| Thermal Resistance  | Thermal conductivity (W/mK)   | $\lambda_D$ 0,038     | EN 13162:2012 + A1:2015       |
|   | Thermal Resistance  | See performance chart |                               |
|   | Thickness range (mm)  | 20 - 200              |                               |
|   | Thickness tolerance   | T5                    |                               |
| Reaction to Fire  | Reaction to fire  | A1                    |                               |
| Durability of reaction to fire against heat, weathering, ageing / degradation   | Durability Characteristics  | NPD {a}               |                               |
| Durability of thermal resistance against heat, weathering, ageing / degradation | Thermal Resistance  | NPD{b}                |                               |
|   | Thermal conductivity  | NPD                   |                               |
|   | Durability characteristics  | NPD {c}               |                               |
| Compressive Strength  | Compressive Stress / Compressive Strength                           | NPD                   |                               |
|   | Point Load  | NPD                   |                               |
| Tensile / Flexural strength   | Tensile strength perpendicular faces                                | NPD {d}               |                               |
| Durability of compressive Strength against ageing / degradation                 | Compressive creep   | NPD                   |                               |
| Water Permeability  | Short term water absorption   | WS                    |                               |
|   | Long term water absorption  | WL(P)                 |                               |
| Water vapour permeability   | Water vapour transmission, water vapour diffusion resistance factor | NPD                   |                               |
| Impact noise transmissions index (for floors)                                   | Dynamic stiffness   | NPD                   |                               |
|   | Thickness   | NPD                   |                               |
|   | Compressibility   | NPD                   |                               |
|   | Air flow resistivity  | NPD                   |                               |
| Acoustic absorptions index  | Sound absorption  | NPD                   |                               |
| Direct airborne sound insulation index  | Air flow resistivity  | AF5                   |                               |
| Release of dangerous substances to the indoor environment                       | Release of dangerous substances                                     | NPD {e}               |                               |
| Continuous glowing combustion   | Continuous glowing combustion                                       | NPD {e}               |                               |
| NPD - No performance determined   |   |                       |                               |

| Essential Characteristics   | R4224IPCPR  |                       | Harmonised technical standard |
|---|---|-----------------------|-------------------------------|
|   | Performance {f}   | Smart Roof TOP CTF1   |                               |
| Thermal Resistance  | Thermal conductivity (W/mK)   | $\lambda_D$ 0,038     | EN 13162:2012 + A1:2015       |
|   | Thermal Resistance  | See performance chart |                               |
|   | Thickness range (mm)  | 0 - 200               |                               |
|   | Thickness tolerance   | T5                    |                               |
| Reaction to Fire  | Reaction to fire  | A1                    |                               |
| Durability of reaction to fire against heat, weathering, ageing / degradation   | Durability Characteristics  | NPD {a}               |                               |
| Durability of thermal resistance against heat, weathering, ageing / degradation | Thermal Resistance  | NPD{b}                |                               |
|   | Thermal conductivity  | NPD                   |                               |
|   | Durability characteristics  | NPD {c}               |                               |
| Compressive Strength  | Compressive Stress / Compressive Strength                           | NPD                   |                               |
|   | Point Load  | NPD                   |                               |
| Tensile / Flexural strength   | Tensile strength perpendicular faces                                | NPD {d}               |                               |
| Durability of compressive Strength against ageing / degradation                 | Compressive creep   | NPD                   |                               |
| Water Permeability  | Short term water absorption   | NPD                   |                               |
|   | Long term water absorption  | WL(P)                 |                               |
| Water vapour permeability   | Water vapour transmission, water vapour diffusion resistance factor | NPD                   |                               |
| Impact noise transmissions index (for floors)                                   | Dynamic stiffness   | NPD                   |                               |
|   | Thickness   | NPD                   |                               |
|   | Compressibility   | NPD                   |                               |
|   | Air flow resistivity  | NPD                   |                               |
| Acoustic absorptions index  | Sound absorption  | NPD                   |                               |
| Direct airborne sound insulation index  | Air flow resistivity  | NPD                   |                               |
| Release of dangerous substances to the indoor environment                       | Release of dangerous substances                                     | NPD {e}               |                               |
| Continuous glowing combustion   | Continuous glowing combustion                                       | NPD {e}               |                               |
| NPD - No performance determined   |   |                       |                               |

| Essential Characteristics   | R4224IPCPR  |                       | Harmonised technical standard |
|---|---|-----------------------|-------------------------------|
|   | Performance {f}   | Smart Roof TOP CTF2   |                               |
| Thermal Resistance  | Thermal conductivity (W/mK)   | $\lambda_D$ 0,038     | EN 13162:2012 + A1:2015       |
|   | Thermal Resistance  | See performance chart |                               |
|   | Thickness range (mm)  | 20 - 120              |                               |
|   | Thickness tolerance   | T5                    |                               |
| Reaction to Fire  | Reaction to fire  | A1                    |                               |
| Durability of reaction to fire against heat, weathering, ageing / degradation   | Durability Characteristics  | NPD {a}               |                               |
| Durability of thermal resistance against heat, weathering, ageing / degradation | Thermal Resistance  | NPD{b}                |                               |
|   | Thermal conductivity  | NPD                   |                               |
|   | Durability characteristics  | NPD {c}               |                               |
| Compressive Strength  | Compressive Stress / Compressive Strength                           | NPD                   |                               |
|   | Point Load  | NPD                   |                               |
| Tensile / Flexural strength   | Tensile strength perpendicular faces                                | NPD {d}               |                               |
| Durability of compressive Strength against ageing / degradation                 | Compressive creep   | NPD                   |                               |
| Water Permeability  | Short term water absorption   | NPD                   |                               |
|   | Long term water absorption  | WL(P)                 |                               |
| Water vapour permeability   | Water vapour transmission, water vapour diffusion resistance factor | NPD                   |                               |
| Impact noise transmissions index (for floors)                                   | Dynamic stiffness   | NPD                   |                               |
|   | Thickness   | NPD                   |                               |
|   | Compressibility   | NPD                   |                               |
|   | Air flow resistivity  | NPD                   |                               |
| Acoustic absorptions index  | Sound absorption  | NPD                   |                               |
| Direct airborne sound insulation index  | Air flow resistivity  | NPD                   |                               |
| Release of dangerous substances to the indoor environment                       | Release of dangerous substances                                     | NPD {e}               |                               |
| Continuous glowing combustion   | Continuous glowing combustion                                       | NPD {e}               |                               |
| NPD - No performance determined   |   |                       |                               |

| Essential Characteristics   | R4224IPCPR  |                       | Harmonised technical standard |
|---|---|-----------------------|-------------------------------|
|   | Performance {f}   | SmartRoof Top         |                               |
| Thermal Resistance  | Thermal conductivity (W/mK)   | $\lambda_D$ 0,038     | EN 13162:2012 + A1:2015       |
|   | Thermal Resistance  | See performance chart |                               |
|   | Thickness range (mm)  | 40 - 100              |                               |
|   | Thickness tolerance   | T5                    |                               |
| Reaction to Fire  | Reaction to fire  | A1                    |                               |
| Durability of reaction to fire against heat, weathering, ageing / degradation   | Durability Characteristics  | NPD {a}               |                               |
| Durability of thermal resistance against heat, weathering, ageing / degradation | Thermal Resistance  | NPD{b}                |                               |
|   | Thermal conductivity  | NPD                   |                               |
|   | Durability characteristics  | NPD {c}               |                               |
| Compressive Strength  | Compressive Stress / Compressive Strength                           | CS(10)70              |                               |
|   | Point Load  | PL(5)650              |                               |
| Tensile / Flexural strength   | Tensile strength perpendicular faces                                | TR10 {d}              |                               |
| Durability of compressive Strength against ageing / degradation                 | Compressive creep   | NPD                   |                               |
| Water Permeability  | Short term water absorption   | NPD                   |                               |
|   | Long term water absorption  | NPD                   |                               |
| Water vapour permeability   | Water vapour transmission, water vapour diffusion resistance factor | NPD                   |                               |
| Impact noise transmissions index (for floors)                                   | Dynamic stiffness   | NPD                   |                               |
|   | Thickness   | NPD                   |                               |
|   | Compressibility   | NPD                   |                               |
|   | Air flow resistivity  | NPD                   |                               |
| Acoustic absorptions index  | Sound absorption  | NPD                   |                               |
| Direct airborne sound insulation index  | Air flow resistivity  | NPD                   |                               |
| Release of dangerous substances to the indoor environment                       | Release of dangerous substances                                     | NPD {e}               |                               |
| Continuous glowing combustion   | Continuous glowing combustion                                       | NPD {e}               |                               |
| NPD - No performance determined   |   |                       |                               |

8. Appropriate Technical Documentation and / or Specific Technical Documentation:

Not applicable

The performance of the product identified above is in conformity with the set of declared performances.

This declaration of performance is issued, in accordance with Regulation (EU) No 305/2011, under the sole responsibility of the manufacturer identified above.

| Thermal Resistance Table |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| [mm]                     | 20   | 30   | 40   | 50   | 60   | 70   | 80   | 90   | 100  | 110  | 120  | 130  | 140  | 150  |
| [m <sup>2</sup> K/W]     | 0,50 | 0,75 | 1,05 | 1,30 | 1,55 | 1,80 | 2,10 | 2,35 | 2,60 | 2,85 | 3,15 | 3,40 | 3,65 | 3,90 |
| [mm]                     | 160  | 170  | 180  | 190  | 200  |      |      |      |      |      |      |      |      |      |
| [m <sup>2</sup> K/W]     | 4,20 | 4,45 | 4,70 | 5,00 | 5,25 |      |      |      |      |      |      |      |      |      |

Signed for an on behalf of the manufacturer by:

Branislav Popović - Plant manager  
(Name and function)



Surdulica - 11-03-21  
(Place and date of issue)

{a} No change in reaction to fire properties for MW Products. The fire performance of MW does not deteriorate with time. The Euroclass classification of the product is related to the organic content, which cannot increase with time.

{b} Thermal conductivity of MW products does not change with time, experience has shown the fibre structure to be stable and the porosity contains no other gases than atmospheric air

{c} For dimensional stability thickness only

{d} This characteristic also covers handling and installation

{e} European test methods are under development

{f} Also valid and applicable for multilayers