

Insulation



Product overview Export

Premium and high performance insulation for all applications



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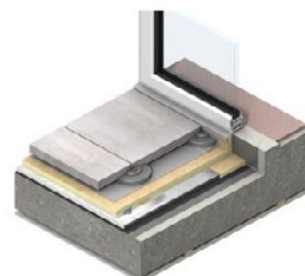
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OPTIM-R®

Vacuum Insulated Panel

Description

OPTIM-R® comprises a rigid vacuum insulation board with a microporous core which is evacuated, encased and sealed in a thin, gas-tight envelope, giving outstanding thermal conductivity, with the thinnest possible solution to insulation problems. OPTIM-R® vacuum insulated panels offer solutions for those times when you know you're going to run out of space or for when space is tight and can be used in a number of applications.



Technical specifications

Property	Value
Thermal conductivity λ_D (EN 12667)	λ_D -value 0,007 W/(m·K)
Standard dimensions (EN 822)	1200 x 600 mm 1200 x 400 mm 1200 x 300 mm 600 x 600 mm 600 x 400 mm 400 x 300 mm 300 x 300 mm
Edge finishing	flat profile edges
Reaction to fire (EN 13501-1)	E/Efl
Density (EN 1602)	180 - 220 kg/m ³
Compressive strength at 10% deformation (EN 826)	≥ 150 kPa

For more information regarding the technical performance of our products, please contact our Techline at techline@kingspaninsulation.eu or +31 800 25 25 252.

Products

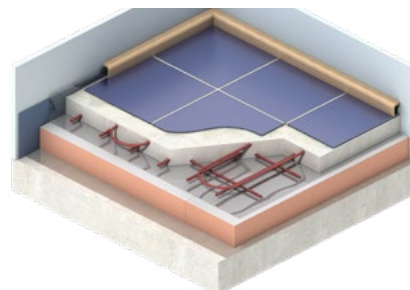
Thickness (mm)	R _D -value (m ² ·K/W)	Number (boards/pack)	Content (m ² /pack)	Stock
20	2,85	-	-	-
25	3,55	-	-	-
30	4,25	-	-	-
40	5,70	-	-	-
50	7,10	-	-	-

Kooltherm® K3

Floorboard

Description

Kooltherm® K3 Floorboard comprises a premium performance rigid thermoset modified resin fibre free insulation core, faced on both sides with a glass tissue based facing, autohesively bonded to the insulation core during manufacture. Kooltherm® K3 Floorboard is used as thermal insulation for floors. The board can be used in combination with underfloor heating systems.



Technical specifications

Property	Value
Thermal conductivity λ_D (EN 13166)	λ_D -value 0,021 W/(m·K) (thickness < 45 mm) λ_D -value 0,020 W/(m·K) (thickness 45-120 mm) λ_D -value 0,021 W/(m·K) (thickness > 120 mm)
Standard dimensions (EN 822)	1200 x 600 mm
Edge finishing	flat profile edges
Reaction to fire (EN 13501-1)	C-s1, d0
Density (EN 1602)	ca. 35 kg/m ³
Compressive strength (EN 826)	≥ 100 kPa
Dimensional stability - length & width (EN 1604, 48 hrs, 70°C at 90% RH)	≤ 1,5%
Dimensional stability - length & width (EN 1604, 48 hrs, -20°C and +70°C)	≤ 1,5%
Closed cell content (EN ISO 4590)	≥ 90%
Available certification	EPD

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Products

Thickness (mm)	R _D -value (m ² ·K/W)	Number (boards/pack)	Content (m ² /pack)	Stock
20	0,95	24	17,28	●
30	1,40	16	11,52	●
40	1,90	12	8,64	●
50	2,50	10	7,20	●
60	3,00	8	5,76	●
70	3,50	6	4,32	●
80	4,00	6	4,32	●
90	4,50	4	2,88	-
100	5,00	5	3,60	●
120	6,00	4	2,88	●
140	6,65	3	2,16	-
150	7,10	4	2,88	-
159	7,55	3	2,16	-
180*	8,55	2	1,44	-
200*	9,50	2	1,44	-

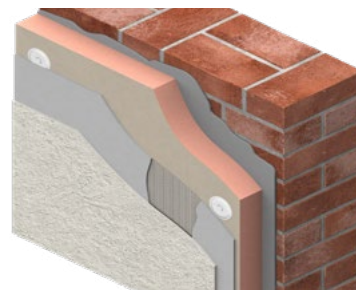
* Bonded

Kooltherm® K5

External Wall Board

Description

Kooltherm® K5 External Wall Board comprises a premium performance rigid thermoset modified resin fibre free insulation core, faced on both sides with a glass tissue based facing, autohesively bonded to the insulation core during manufacture. Kooltherm® K5 External Wall Board is used as thermal insulation for masonry walls.



Technical specifications

Property	Value
Thermal conductivity λ_D (EN 13166)	λ_D -value 0,021 W/(m·K) (thickness < 45 mm) λ_D -value 0,020 W/(m·K) (thickness 45-120 mm) λ_D -value 0,021 W/(m·K) (thickness > 120 mm)
Standard dimensions (EN 822)	1200 x 400 mm
Edge finishing	flat profile edges
Reaction to fire (EN 13501-1)	C-s2, d0
Density (EN 1602)	ca. 35 kg/m ³
Compressive strength (EN 826)	≥ 100 kPa
Dimensional stability - length & width (EN 1604, 48 hrs, 70°C at 90% RH)	≤ 1,5%
Dimensional stability - length & width (EN 1604, 48 hrs, -20°C and +70°C)	≤ 1,5%
Closed cell content (EN ISO 4590)	≥ 90%
Available certification	EPD Passive House Certificate

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Products

Thickness (mm)	R _D -value (m ² ·K/W)	Number (boards/pack)	Content (m ² /pack)	Stock
20	0,95	18	8,64	●
30	1,40	12	5,76	●
40	1,90	14	6,72	●
50	2,50	11	5,28	●
60	3,00	10	4,80	●
70	3,50	8	3,84	●
80	4,00	7	3,36	●
90	4,50	6	2,88	-
100	5,00	6	2,88	●
120	6,00	5	2,40	●
140	6,65	4	1,92	●
160*	7,60	3	1,44	●
180*	8,55	3	1,44	●
200*	9,50	3	1,44	●

* Bonded

Kooltherm® K8

Cavity Board

Description

Kooltherm® K8 Cavity Board comprises a premium performance rigid thermoset modified resin fibre free insulation core, faced on both sides with low emissivity composite foil based facing. Kooltherm® K8 Cavity Board is used as thermal insulation for cavity walls.



Technical specifications

Property	Value
Thermal conductivity λ_D (EN 13166)	λ_D -value 0,021 W/(m·K) (thickness < 45 mm) λ_D -value 0,020 W/(m·K) (thickness 45-120 mm) λ_D -value 0,021 W/(m·K) (thickness > 120 mm)
Standard dimensions (EN 822)	1200 x 600 mm
Functional dimensions (EN 822)	1190 x 590 mm
Edge finishing	10 mm rebate
Reaction to fire (EN 13501-1)	C-s1, d0
Density (EN 1602)	ca. 35 kg/m ³
Compressive strength (EN 826)	≥ 100 kPa
Dimensional stability - length & width (EN 1604, 48 hrs, 70°C at 90% RH)	≤ 1,5%
Dimensional stability - length & width (EN 1604, 48 hrs, -20°C and +70°C)	≤ 1,5%
Closed cell content (EN ISO 4590)	≥ 90%
Available certification	EPD

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Products

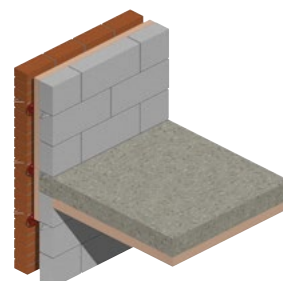
Thickness (mm)	R _D -value (m ² ·K/W)	Number (boards/pack)	Content (m ² /pack)	Stock
50	2,50	10	7,20	●
63	3,15	8	5,76	●
74	3,70	8	5,76	●
84	4,20	6	4,32	●
95	4,75	5	3,60	●
105	5,25	4	2,88	●
117	5,85	4	2,88	●
126	6,00	4	2,88	●
147	7,00	4	2,88	●

Kooltherm® K10

Soffit Board

Description

Kooltherm® K10 Soffit Board comprises a premium performance rigid thermoset modified resin fibre free insulation core, faced on both sides with a glass tissue based facing. Kooltherm® K10 Soffit Board is used as thermal insulation for structural ceilings (soffits).



Technical specifications

Property	Value
Thermal conductivity λ_D (EN 13166)	λ_D -value 0,021 W/(m·K) (thickness < 45 mm) λ_D -value 0,020 W/(m·K) (thickness 45-120 mm) λ_D -value 0,021 W/(m·K) (thickness > 120 mm)
Standard dimensions (EN 822)	1200 x 600 mm
Edge finishing	flat profile edges
Reaction to fire (EN 13501-1)	C-s1, d0
Density (EN 1602)	ca. 35 kg/m ³
Compressive strength (EN 826)	≥ 100 kPa
Dimensional stability - length & width (EN 1604, 48 hrs, 70°C at 90% RH)	≤ 1,5%
Dimensional stability - length & width (EN 1604, 48 hrs, -20°C and +70°C)	≤ 1,5%
Closed cell content (EN ISO 4590)	≥ 90%
Available certification	EPD

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Products

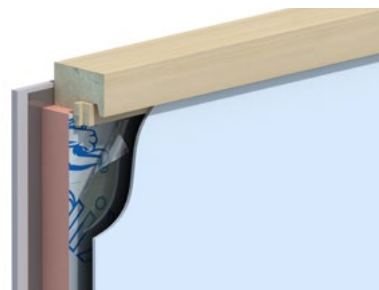
Thickness (mm)	R _D -value (m ² ·K/W)	Number (boards/pack)	Content (m ² /pack)	Stock
40	1,90	12	8,64	-
60	3,00	8	5,76	-
80	4,00	6	4,32	-
100	5,00	5	3,60	-
120	6,00	4	2,88	-

Kooltherm® K12

Framing Board

Description

Kooltherm® K12 Framing Board comprises a premium performance rigid thermoset modified resin fibre free insulation core, faced on both sides with a low emissivity composite foil based facing, autohesively bonded to the insulation core during manufacture. This reflective, low emissivity surface improves the thermal resistance of any unventilated cavity adjacent to the board. Kooltherm® K12 Framing Board is used as thermal insulation for timber and steel framing systems and can be used between studs or as an insulating sheathing.



Technical specifications

Property	Value
Thermal conductivity λ_D (EN 13166)	λ_D -value 0,021 W/(m·K) (thickness < 45 mm) λ_D -value 0,020 W/(m·K) (thickness 45-120 mm)
Standard dimensions (EN 822)	1200 x 600 mm 3000 x 1200 mm
Edge finishing	flat profile edges
Reaction to fire (EN 13501-1)	C-s1, d0
Density (EN 1602)	ca. 35 kg/m ³
Compressive strength (EN 826)	≥ 100 kPa
Dimensional stability - length & width (EN 1604, 48 hrs, 70°C at 90% RH)	≤ 1,5%
Dimensional stability - length & width (EN 1604, 48 hrs, -20°C and +70°C)	≤ 1,5%
Closed cell content (EN ISO 4590)	≥ 90%
Available certification	EPD

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Products - 1200 x 600 mm

Thickness (mm)	R _D -value (m ² ·K/W)	Number (boards/pack)	Content (m ² /pack)	Stock
40	1,90	12	8,64	●
50	2,50	10	7,20	●
60	3,00	8	5,76	●
70	3,50	6	4,32	●
80	4,00	6	4,32	●
100	5,00	5	3,60	●
120	6,00	4	2,88	●

Products - 3000 x 1200 mm

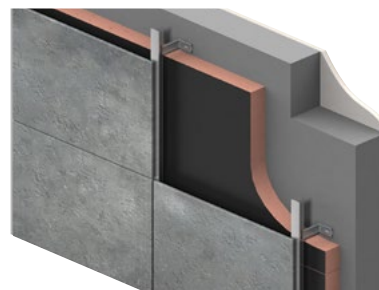
Thickness (mm)	R _D -Value (m ² ·K/W)	Number (boards/pack)	Content (m ² /pack)	Stock
40	1,90	8	28,80	●
50	2,50	6	21,60	●
60	3,00	5	18,00	●
70	3,50	4	14,40	●
80	4,00	4	14,40	●

Kooltherm® K15

Rainscreen Board

Description

Kooltherm® K15 Rainscreen Board comprises a premium performance rigid thermoset modified resin fibre free insulation core, faced on one side with a silver low emissivity composite foil facing, and on the other with a black composite foil facing, both autohesively bonded to the insulation core during manufacture. Kooltherm® K15 Rainscreen Board is used as thermal insulation behind rainscreen cladding systems.



Technical specifications

Property	Value
Thermal conductivity λ_D (EN 13166)	λ_D -value 0,021 W/(m·K) (thickness < 45 mm) λ_D -value 0,020 W/(m·K) (thickness 45-120 mm) λ_D -value 0,021 W/(m·K) (thickness > 120 mm)
Standard dimensions (EN 822)	1200 x 600 mm 159 mm: 1180 x 600 mm
Edge finishing	flat profile edges
Reaction to fire (EN 13501-1)	B-s2, d0
Density (EN 1602)	ca. 35 kg/m ³
Compressive strength (EN 826)	≥ 100 kPa
Dimensional stability - length & width (EN 1604, 48 hrs, 70°C at 90% RH)	≤ 1,5%
Dimensional stability - length & width (EN 1604, 48 hrs, -20°C and +70°C)	≤ 1,5%
Closed cell content (EN ISO 4590)	≥ 90%
Available certification	EPD

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Products

Thickness (mm)	R _D -value (m ² ·K/W)	Number (boards/pack)	Content (m ² /pack)	Stock
20	0,95	24	17,28	●
40	1,90	12	8,64	-
60	3,00	8	5,76	●
80	4,00	6	4,32	●
100	5,00	5	3,60	●
120	6,00	4	2,88	●
140	6,65	3	2,16	●
159*	7,55	3	2,12	-

* 1180 x 600 mm

Kooltherm® K17

Insulated Plasterboard

Description

Kooltherm® K17 Insulated Plasterboard comprises a premium performance rigid thermoset modified resin fibre free insulation core, faced on one side with a glass tissue based facing, autohesively bonded to the insulation core during manufacture, and on the other with a 12,5 mm plasterboard. Kooltherm® K17 Insulated Plasterboard is used as thermal insulation for mechanically fixed and adhesively bonded insulated dry-lining.



Technical specifications

Property	Value
Thermal conductivity λ_D (EN 13950)	λ_D -value 0,021 W/(m·K) (thickness < 45 mm) λ_D -value 0,020 W/(m·K) (thickness 45-120 mm) λ_D -value 0,250 W/(m·K) (plasterboard)
Standard dimensions (EN 822)	2600 x 1200 mm
Edge finishing	flat profile edges, plasterboard with slope
Reaction to fire (EN 13501-1)	B-s1, d0 (plasterboard) C-s2, d0 (insulation)
Density (EN 1602)	ca. 35 kg/m ³
Dimensional stability - length & width (EN 1604, 48 hrs, 70°C at 90% RH)	≤ 1,5%
Dimensional stability - length & width (EN 1604, 48 hrs, -20°C and +70°C)	≤ 1,5%
Closed cell content (EN ISO 4590)	≥ 90%
Available certification	EPD

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Products

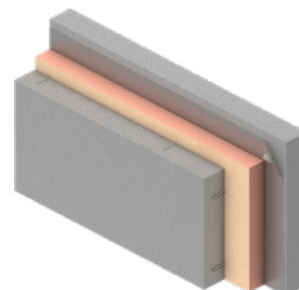
Thickness (mm)	R _D -value (m ² ·K/W)	Number (boards/pack)	Content (m ² /pack)	Stock
20/12,5	1,00	12	37,44	●
50/12,5	2,55	12	37,44	●
70/12,5	3,55	10	31,20	●
80/12,5	4,05	8	24,96	●
90/12,5	4,55	7	21,84	-
100/12,5	5,05	7	21,84	●
120/12,5	6,05	6	18,72	-

Kooltherm® K20

Concrete Sandwich Element Board

Description

Kooltherm® K20 Concrete Sandwich Element Board comprises a premium performance rigid thermoset modified resin with a fibre free insulation core, faced on both sides with a glass tissue based facing. The Kooltherm® K20 Concrete Sandwich Element Board is used as thermal insulation for concrete sandwich elements.



Technical specifications

Property	Value
Thermal conductivity λ_D (EN 13166)	λ_D -value 0,021 W/(m·K) (thickness < 45 mm) λ_D -value 0,020 W/(m·K) (thickness 45 - 120 mm) λ_D -value 0,021 W/(m·K) (thickness > 120 mm)
Standard dimensions (EN 822)	1200 x 600 mm
Edge finishing	flat profile edges
Reaction to fire (EN 13501-1)	C-s1, d0
Density (EN 1602)	ca. 35 kg/m ³
Compressive strength (EN 826)	≥ 100 kPa
Dimensional stability - length & width (EN 1604, 48 hrs, 70°C at 90% RH)	≤ 1,5%
Dimensional stability - length & width (EN 1604, 48 hrs, -20°C and +70°C)	≤ 1,5%
Closed cell content (EN ISO 4590)	≥ 90%
Available certification	EPD

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Products

Thickness (mm)	R _D -value (m ² ·K/W)	Number (boards/pack)	Content (m ² /pack)	Stock
20	0,95	24	17,28	●
30	1,40	16	11,52	●
40	1,90	12	8,64	-
50	2,50	10	7,20	●
60	3,00	8	5,76	●
70	3,50	6	4,32	●
80	4,00	6	4,32	●
90	4,50	4	2,88	●
100	5,00	5	3,60	●
120	6,00	4	2,88	●
140	6,65	3	2,16	●
150	7,10	4	2,88	●
159	7,55	3	2,16	●
180*	8,55	2	1,44	-
200*	9,50	2	1,44	-

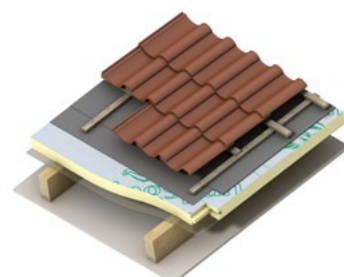
* Bonded

Therma™ TP10

Pitched Roof Board

Description

Therma™ TP10 Pitched Roof Board is an insulation board with a rigid thermoset polyisocyanurate (PIR) fibre free insulation core, faced on both sides with a low emissivity composite foil. Therma™ TP10 Pitched Roof Board is used as thermal insulation for pitched roofs (exterior).



Technical specifications

Property	Value
Thermal conductivity λ_D (EN 13165)	λ_D -value 0,022 W/(m·K)
Standard dimensions (EN 822)	2400 x 1200 mm
Functional dimensions (EN 822)	2380 x 1180 mm
Edge finishing	tongue and groove
Reaction to fire (EN 13501-1)	E
Density (EN 1602)	ca. 30 kg/m ³
Compressive strength at 10% deformation (EN 826)	≥ 150 kPa (thickness ≤ 80 mm) ≥ 120 kPa (thickness > 80 mm)
Dimensional stability - length & width (EN 1604, 48 hrs, 70°C at 90% RH)	≤ 2%
Dimensional stability - length & width (EN 1604, 48 hrs, -20°C)	≤ 1%
Closed cell content (EN ISO 4590)	≥ 90%
Available certification	EPD

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Products

Thickness (mm)	R _D -value (m ² ·K/W)	Number (boards/pack)	Content (m ² /pack)	Stock
80	3,60	4	11,52	-
100	4,50	3	8,64	●
120	5,45	2	5,76	●

Therma™ TP11

Pitched Roof Board

Description

Therma™ TP11 Pitched Roof Board is an insulation board with a rigid thermoset polyisocyanurate (PIR) fibre free insulation core, faced on both sides with a low emissivity composite foil and a vapour permeable adhesive overlap on top. Therma™ TP11 Pitched Roof Board is used as thermal insulation for pitched roofs (exterior). The adhesive overlap makes it a very practical and suitable choice for this application.



Technical specifications

Property	Value
Thermal conductivity λ_D (EN 13165)	λ_D -value 0,022 W/(m·K)
Standard dimensions (EN 822)	2400 x 1200 mm
Functional dimensions (EN 822)	2380 x 1180 mm
Edge finishing	tongue and groove
Reaction to fire (EN 13501-1)	E
Density (EN 1602)	ca. 30 kg/m ³
Compressive strength at 10% deformation (EN 826)	≥ 150 kPa (thickness ≤ 80 mm) ≥ 120 kPa (thickness > 80 mm)
Dimensional stability - length & width (EN 1604, 48 hrs, 70°C at 90% RH)	≤ 2%
Dimensional stability - length & width (EN 1604, 48 hrs, -20°C)	≤ 1%
Closed cell content (EN ISO 4590)	≥ 90%
Available certification	EPD

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Products

Thickness (mm)	R _D -value (m ² ·K/W)	Number (boards/pack)	Content (m ² /pack)	Stock
80	3,60	3	8,64	●
100	4,50	3	8,64	●
120	5,45	2	5,76	●
140	6,35	3	8,64	-
160	7,25	2	5,76	-

Therma™ TP12

Pitched Roof Board

Description

Therma™ TP12 Pitched Roof Board is an insulation board with a rigid thermoset polyisocyanurate (PIR) fibre free insulation core, faced on both sides with a mineral fibre facing and a vapour permeable adhesive overlap on top. Therma™ TP12 Pitched Roof Board is used as thermal insulation for pitched roofs (exterior). The adhesive overlap makes it a very practical and suitable choice for this application.



Technical specifications

Property	Value
Thermal conductivity λ_D (EN 13165)	λ_D -value 0,026 W/(m·K) (thickness 80-119 mm) λ_D -value 0,025 W/(m·K) (thickness \geq 120 mm)
Standard dimensions (EN 822)	2400 x 1200 mm
Functional dimensions (EN 822)	2380 x 1180 mm
Edge finishing	tongue and groove
Reaction to fire (EN 13501-1)	E
Density (EN 1602)	ca. 30 kg/m ³
Compressive strength at 10% deformation (EN 826)	\geq 150 kPa (thickness \leq 80 mm) \geq 120 kPa (thickness $>$ 80 mm)
Dimensional stability - length & width (EN 1604, 48 hrs, 70°C at 90% RH)	\leq 2%
Dimensional stability - length & width (EN 1604, 48 hrs, -20°C)	\leq 1%
Closed cell content (EN ISO 4590)	\geq 90%
Available certification	EPD

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Products

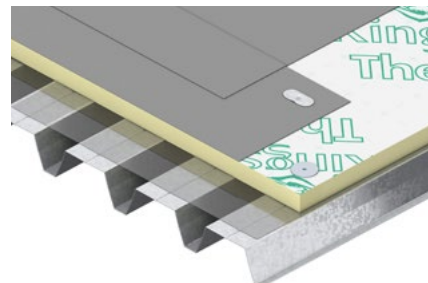
Thickness (mm)	R _D -value (m ² ·K/W)	Number (boards/pack)	Content (m ² /pack)	Stock
80	3,05	3	8,64	-
100	3,80	3	8,64	-
120	4,80	2	5,76	-
140	5,60	3	8,64	-
160	6,40	2	5,76	-

Therma™ TR26

Roof Board

Description

Therma™ TR26 Roof Board is an insulation board with a rigid thermoset polyisocyanurate (PIR) fibre free insulation core, faced on both sides with a low emissivity composite foil and meets the strict fire safety requirements as set by Factory Mutual (FM approval). Therma™ TR26 Roof Board is used as thermal insulation under mechanically fixed or non-fixed ballasted roofing systems.



Technical specifications

Property	Value
Thermal conductivity λ_D (EN 13165)	λ_D -value 0,022 W/(m·K)
Standard dimensions (EN 822)	2400 x 1200 mm
Edge finishing	flat profile edges 160 mm: rebated sides
Reaction to fire (EN 13501-1)	E
Density (EN 1602)	ca. 30 kg/m ³
Compressive strength at 10% deformation (EN 826)	≥ 150 kPa (thickness ≤ 80 mm) ≥ 120 kPa (thickness > 80 mm)
Dimensional stability - length & width (EN 1604, 48 hrs, 70°C at 90% RH)	≤ 2%
Dimensional stability - length & width (EN 1604, 48 hrs, -20°C)	≤ 1%
Closed cell content (EN ISO 4590)	≥ 90%
Available certification	EPD FM approval*

* FM Approved in accordance with "FM 4470 for use in Class 1 and non-combustible roof deck constructions" - single layer 40 up to 160 mm or multi-layers up to 280 mm. For details please consult www.roofnav.com or contact our Technical Service Department.

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Products

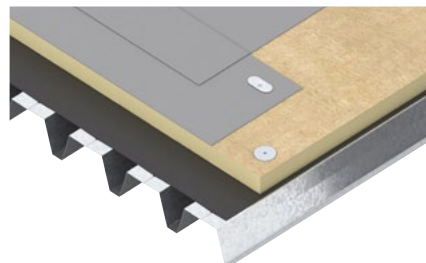
Thickness (mm)	R _D -value (m ² ·K/W)	Number (boards/pack)	Content (m ² /pack)	Stock
30	1,35	8	23,04	-
40	1,80	6	17,28	●
50	2,25	5	14,40	●
60	2,70	5	14,40	●
70	3,15	4	11,52	●
80	3,60	4	11,52	●
90	4,05	3	8,64	●
100	4,50	3	8,64	●
120	5,45	3	8,64	●
140	6,35	3	8,64	-
160	7,25	2	5,76	●

Therma™ TR27

Roof Board

Description

Therma™ TR27 Roof Board is an insulationboard with a rigid thermoset polyisocyanurate (PIR) fibre free insulation core, faced on both sides with acoated glass tissue based facing and meets the strict fire safety requirements as set by Factory Mutual (FM approval). Therma™ TR27 Roof Board is used as thermal insulation under adherent, mechanically fixed or non-fixed ballasted roofing systems.



Technical specifications

Property	Value
Thermal conductivity λ_D (EN 13165)	λ_D -value 0,027 W/(m·K) (thickness < 80 mm) λ_D -value 0,026 W/(m·K) (thickness 80-119 mm) λ_D -value 0,025 W/(m·K) (thickness \geq 120 mm)
Standard dimensions (EN 822)	1200 x 600 mm
Edge finishing	flat profile edges
Reaction to fire (EN 13501-1)	E
Density (EN 1602)	ca. 30 kg/m ³
Compressive strength at 10% deformation (EN 826)	\geq 150 kPa (thickness \leq 80 mm) \geq 120 kPa (thickness > 80 mm)
Dimensional stability - length & width (EN 1604, 48 hrs, 70°C at 90% RH)	\leq 2%
Dimensional stability - length & width (EN 1604, 48 hrs, -20°C)	\leq 1%
Closed cell content (EN ISO 4590)	\geq 90%
Available certification	EPD FM approval*

* FM Approved in accordance with "FM 4470 for use in Class 1 and non-combustible roof deck constructions" - single layer 40 up to 160 mm or multi-layers up to 280 mm.

For details please consult www.roofnav.com or contact our Technical Service Department.

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Products

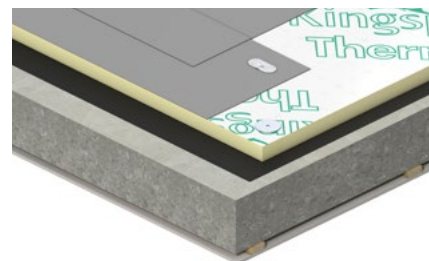
Thickness (mm)	R _D -value (m ² ·K/W)	Number (boards/pack)	Content (m ² /pack)	Stock
30	1,10	14	10,08	●
40	1,45	10	7,20	●
50	1,85	8	5,76	●
60	2,20	7	5,04	●
70	2,55	6	4,32	-
80	3,05	5	3,60	●
90	3,45	5	3,60	-
100	3,80	4	2,88	●
120	4,80	3	2,16	●
140	5,60	3	2,16	-

Therma™ TT46

Tapered Roof Board

Description

Therma™ TT46 Tapered Roof Board is an insulation board with a rigid thermoset polyisocyanurate (PIR) fibre free insulation core, faced on both sides with a low emissivity composite foil and meets the strict fire safety requirements as set by Factory Mutual (FM approval). Therma™ TT46 Tapered Roof Board is used as thermal insulation under mechanically fixed or non-fixed ballasted roofing systems and enhances water drainage from flat roofs.



Technical specifications

Property	Value
Thermal conductivity λ_D (EN 13165)	λ_D -value 0,022 W/(m·K)
Standard dimensions (EN 822)	1200 x 1200 mm
Edge finishing	flat profile edges
Reaction to fire (EN 13501-1)	E
Density (EN 1602)	ca. 30 kg/m ³
Compressive strength at 10% deformation (EN 826)	≥ 150 kPa (thickness ≤ 80 mm) ≥ 120 kPa (thickness > 80 mm)
Dimensional stability - length & width (EN 1604, 48 hrs, 70°C at 90% RH)	≤ 2%
Dimensional stability - length & width (EN 1604, 48 hrs, -20°C)	≤ 1%
Closed cell content (EN ISO 4590)	≥ 90%
Available certification	EPD FM approval*

* FM Approved in accordance with "FM 4470 for use in Class 1 and non-combustible roof deck constructions" - single layer 40 up to 160 mm or multi-layers up to 280 mm.

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Products - 15 mm fall

Thickness (mm)	R _D -value min. (m ² ·K/W)	R _D -value max. (m ² ·K/W)	Number (boards/pack)	Content (m ² /pack)	Stock
30/45	1,35	2,00	8	11,52	●
45/60	2,00	2,70	6	8,64	●
60/75	2,70	3,40	4	5,76	●
75/90	3,40	4,05	4	5,76	●

Products - 20 mm fall

Thickness (mm)	R _D -value min. (m ² ·K/W)	R _D -value max. (m ² ·K/W)	Number (boards/pack)	Content (m ² /pack)	Stock
30/50	1,35	2,25	8	11,52	●
50/70	2,25	3,15	6	8,64	●
70/90	3,15	4,05	4	5,76	●
90/110	4,05	5,00	4	5,76	●
110/130	5,00	5,90	2	2,88	●

Products - 25 mm fall

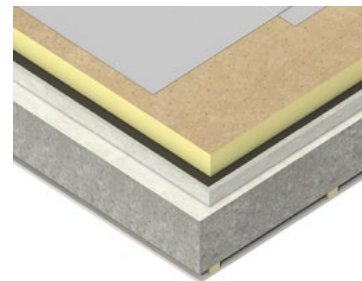
Thickness (mm)	R _D -value min. (m ² ·K/W)	R _D -value max. (m ² ·K/W)	Number (boards/pack)	Content (m ² /pack)	Stock
25/50	1,10	2,25	8	11,52	●
50/75	2,25	3,40	6	8,64	●
75/100	3,40	4,50	4	5,76	●
100/125	4,50	5,65	4	5,76	●

Therma™ TT47

Tapered Roof Board

Description

Therma™ TT47 Tapered Roof Board is an insulation board with a rigid thermoset polyisocyanurate (PIR) fibre free insulation core, faced on both sides with a coated glass tissue based facing and meets the strict fire safety requirements as set by Factory Mutual (FM approval). Therma™ TT47 Tapered Roof Board is used as thermal insulation under adherent, mechanically fixed or non-fixed ballasted roofing systems and enhances water drainage from flat roofs.



Technical specifications

Property	Value
Thermal conductivity λ_D (EN 13165)	λ_D -value 0,027 W/(m·K) (thickness < 80 mm) λ_D -value 0,026 W/(m·K) (thickness 80-119 mm) λ_D -value 0,025 W/(m·K) (thickness \geq 120 mm)
Standard dimensions (EN 822)	1200 x 1200 mm
Edge finishing	flat profile edges
Reaction to fire (EN 13501-1)	E
Density (EN 1602)	ca. 30 kg/m ³
Compressive strength at 10% deformation (EN 826)	\geq 150 kPa (thickness \leq 80 mm) \geq 120 kPa (thickness > 80 mm)
Dimensional stability - length & width (EN 1604, 48 hrs, 70°C at 90% RH)	\leq 2%
Dimensional stability - length & width (EN 1604, 48 hrs, -20°C)	\leq 1%
Closed cell content (EN ISO 4590)	\geq 90%
Available certification	EPD FM approval*

* FM Approved in accordance with "FM 4470 for use in Class 1 and non-combustible roof deck constructions" - single layer 40 up to 160 mm or multi-layers up to 280 mm. For details please consult www.roofnav.com or contact our Technical Service Department.

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Products - 25 mm fall

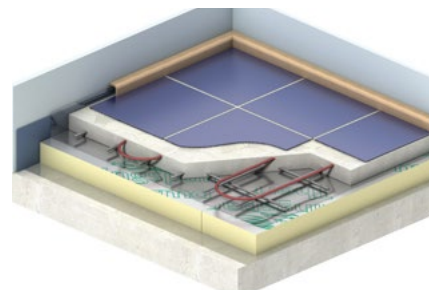
Thickness (mm)	R_D -value min. (m ² ·K/W)	R_D -value max. (m ² ·K/W)	Number (boards/pack)	Content (m ² /pack)	Stock
25/50	0,90	1,85	8	11,52	●
50/75	1,85	2,75	6	8,64	●
75/100	2,75	3,70	4	5,76	●
100/125	3,80	4,80	4	5,76	●

Therma™ TF70

Floorboard

Description

Therma™ TF70 Floorboard is an insulation board with a rigid thermoset polyisocyanurate (PIR) fibre free insulation core, faced on both sides with a low emissivity composite foil. Therma™ TF70 Floorboard is used as thermal insulation for floors.



Technical specifications

Property	Value
Thermal conductivity λ_D (EN 13165)	λ_D -value 0,022 W/(m·K)
Standard dimensions (EN 822)	1200 x 600 mm
Edge finishing	flat profile edges
Reaction to fire (EN 13501-1)	E
Density (EN 1602)	ca. 30 kg/m ³
Compressive strength at 10% deformation (EN 826)	≥ 120 kPa
Dimensional stability - length & width (EN 1604, 48 hrs, 70°C at 90% RH)	≤ 2%
Dimensional stability - length & width (EN 1604, 48 hrs, -20°C)	≤ 1%
Closed cell content (EN ISO 4590)	≥ 90%
Available certification	EPD

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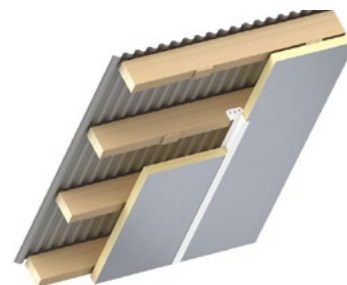
Products

Thickness (mm)	R _D -value (m ² ·K/W)	Number (boards/pack)	Content (m ² /pack)	Stock
20	0,90	25	18,00	●
30	1,35	16	11,52	●
40	1,80	12	8,64	●
50	2,25	10	7,20	●
60	2,70	8	5,76	●
70	3,15	7	5,04	●
80	3,60	6	4,32	●
90	4,05	5	3,60	-
100	4,50	4	2,88	●

Selthaan® Alu

Description

Selthaan® Alu is an insulation board with a rigid thermoset polyisocyanurate (PIR) fibre free insulation core, faced on both sides with PE coated alu craft. Selthaan® Alu is used as thermal insulation for agricultural buildings and technical applications.



Technical specifications

Property	Value
Thermal conductivity λ_D (EN 13165)	λ_D -value 0,029 W/(m·K) (thickness < 80 mm) λ_D -value 0,028 W/(m·K) (thickness \geq 80 mm)
Standard dimensions (EN 822)	length available from 1200 to 12000 mm
Edge finishing	flat profile edges
Reaction to fire (EN 13501-1)	F
Density (EN 1602)	ca. 30 kg/m ³
Compressive strength at 10% deformation (EN 826)	\geq 100 kPa
Dimensional stability - length & width (EN 1604, 48 hrs, 70°C at 90% RH)	\leq 1%
Dimensional stability - length & width (EN 1604, 48 hrs, -20°C)	\leq 0,5%
Closed cell content (EN ISO 4590)	\geq 90%
Available certification	EPD

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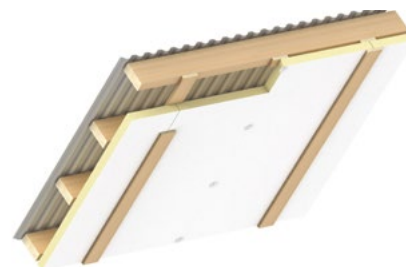
Products

Thickness (mm)	R _D -value (m ² ·K/W)	Number (boards/pack)	Content (m ² /pack)	Stock
25	0,85	-	-	-
30	1,00	-	-	-
40	1,35	-	-	-
50	1,70	-	-	-
60	2,05	-	-	-
80	2,85	-	-	-
100	3,55	-	-	-

Selthaan® Megaplus SE

Description

Selthaan® Megaplus SE is an insulation board with a rigid thermoset polyisocyanurate (PIR) fibre free insulation core, faced with a blanc stucco aluminium foil on one side and white stucco aluminium on the other side. Selthaan® Megaplus SE is used as thermal insulation for agricultural buildings, stables and storage rooms.



Technical specifications

Property	Value
Thermal conductivity λ_D (EN 13165)	λ_D -value 0,024 W/(m·K)
Standard dimensions (EN 822)	1200 x 5000 mm length available from 1200 to 6500 mm
Edge finishing	flat profile edges
Reaction to fire (EN 13501-1)	C-s2, d0
Density (EN 1602)	ca. 30 kg/m ³
Compressive strength at 10% deformation (EN 826)	≥ 150 kPa
Dimensional stability - length & width (EN 1604, 48 hrs, 70°C at 90% RH)	≤ 1%
Dimensional stability - length & width (EN 1604, 48 hrs, -20°C)	≤ 0,5%
Closed cell content (EN ISO 4590)	≥ 90%
Available certification	EPD

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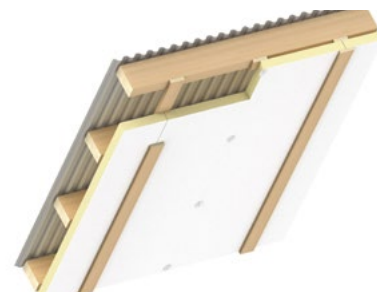
Products

Thickness (mm)	R _D -value (m ² ·K/W)	Number (boards/pack)	Content (m ² /pack)	Stock
25	1,00	-	-	-
30	1,25	-	-	-
40	1,65	-	-	-
50	2,05	-	-	-
60	2,50	-	-	-
70	2,90	-	-	-

Selthaan® Megaplus HD

Description

Selthaan® Megaplus HD is an insulation board with a rigid thermoset polyisocyanurate (PIR) fibre free insulation core, faced with a blanc stucco aluminium foil on one side and white stucco aluminium on the other side. Selthaan® Megaplus HD is used as thermal insulation for agricultural buildings, stables and storage rooms.



Technical specifications

Property	Value
Thermal conductivity λ_D (EN 13165)	λ_D -value 0,024 W/(m·K)
Standard dimensions (EN 822)	length available from 1200 to 6500 mm
Edge finishing	flat profile edges
Reaction to fire (EN 13501-1)	C-s2, d0
Density (EN 1602)	ca. 35 kg/m ³
Compressive strength at 10% deformation (EN 826)	≥ 150 kPa
Dimensional stability - length & width (EN 1604, 48 hrs, 70°C at 90% RH)	≤ 1%
Dimensional stability - length & width (EN 1604, 48 hrs, -20°C)	≤ 0,5%
Closed cell content (EN ISO 4590)	≥ 90%

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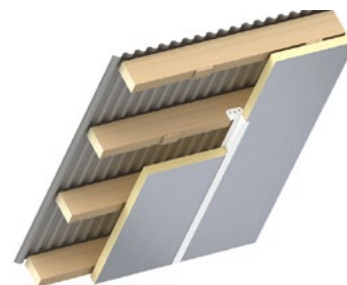
Products

Thickness (mm)	R _D -value (m ² ·K/W)	Number (boards/pack)	Content (m ² /pack)	Stock
30	1,25	-	-	-
40	1,65	-	-	-
50	2,05	-	-	-
60	2,50	-	-	-

Selthaan® Mehrlagen

Description

Selthaan® Mehrlagen is an insulation board with a rigid thermoset polyisocyanurate (PIR) fibre free insulation core, faced on both sides with an aluminium composite foil.



Technical specifications

Property	Value
Thermal conductivity λ_D (EN 13165)	λ_D -value 0,025 W/(m·K)
Standard dimensions (EN 822)	length available from 1200 to 6500 mm
Edge finishing	flat profile edges
Reaction to fire (EN 13501-1)	E
Density (EN 1602)	ca. 30 kg/m ³
Compressive strength at 10% deformation (EN 826)	≥ 150 kPa
Dimensional stability - length & width (EN 1604, 48 hrs, 70°C at 90% RH)	≤ 1%
Dimensional stability - length & width (EN 1604, 48 hrs, -20°C)	≤ 0,5%
Closed cell content (EN ISO 4590)	≥ 90%
Available certification	EPD

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Products

Thickness (mm)	R _D -value (m ² ·K/W)	Number (boards/pack)	Content (m ² /pack)	Stock
25	1,00	-	-	-
40	1,60	-	-	-
50	2,00	-	-	-
60	2,40	-	-	-
80	3,20	-	-	-

Accessoires

H-profile, white PVC

For insulation thickness (mm)	Length (m)	Content (m ² /pack)	Stock
25	5	25	●
30	5	25	●
40	5	25	●
50	5	25	●
60	5	25	●
80	5	25	●
100	5	25	●



Mounting clips for H-profile

Length (m)	Content (clips/pack)	Stock
35	25	●
70	25	●
120	25	●
150	25	●
200	25	●



U-profile, white PVC

For insulation thickness (mm)	Length (m)	Content (m ² /pack)	Stock
25	5	25	●
30	5	25	●
40	5	25	●
50	5	25	●
60	5	25	●
80	5	25	●
100	5	25	●



Chair-profile, white PVC

For insulation thickness (mm)	Length (m)	Content (m ² /pack)	Stock
25	5	25	-



Eco Agrar Screwdriver

Unit	Stock
piece	●



Accessoires

Eco Agrar Screw, white

For insulation thickness	Length (mm)	Content (screws/pack)	Stock
up to 30 mm	60	50	●
up to 50 mm	80	50	●
up to 70 mm	100	50	●
up to 90 mm	120	50	●
up to 110 mm	140	50	●



General Terms and Conditions of Delivery and Payment

Kingspan Insulation B.V. Having its registered office at 7102 JH Winterswijk Lorentzstraat 1, the Netherlands, Chamber of Commerce no.: 11053542;
Kingspan Insulation N.V. Having its registered office at 2300 Turnhout, Visbeekstraat 24, Belgium, Chamber of Commerce no.: 0876.525.355;
Kingspan Insulation GmbH & Co.KG Having its registered office at 49479 Ibbenbüren, Fuggerstrasse 15, Germany, Chamber of Commerce no.: HRA 4162.

Article 1 Definitions

In these General Terms and Conditions of Delivery and Payment, the following words have the stated meanings:

- General Terms and Conditions: the following General Terms and Conditions of Delivery and Payment;
- Supplier: Kingspan Insulation B.V. or Kingspan Insulation N.V. or Kingspan Insulation GmbH & Co.KG;
- Buyer: any natural person, company or other legal person who/which buys the Products from the Supplier or with whom/which the Supplier is negotiating regarding the conclusion of an agreement;
- Agreement: every agreement concerning the sale and delivery of the Products by the Supplier, each addition or change with regard thereto, as well as all legal acts for the preparation and performance of the Agreement;
- Products: all goods delivered and/or to be delivered or services provided and/or to be provided by the Supplier pursuant to the Agreement.

Article 2 Applicability

1. All offers are made subject to the declaration of applicability of these General Terms and Conditions of Delivery and Payment, both to the quotation and acceptance thereof as well as to the agreement that has been concluded. 2. The applicability of General Purchase Conditions or specific conditions or stipulations of the Buyer is excluded. Such conditions or stipulations do not form part of the Agreement, unless the Supplier has accepted them in writing and unconditionally.
3. If any reservations or changes are made in the acceptance as compared to the quotation, contrary to the provisions of the previous paragraph, the agreement will not be concluded until the Supplier has informed the Buyer that it consents to these deviations from the quotation.
4. In the event that special conditions have been agreed on between the Supplier and the Buyer with regard to the sale of certain Products, these special conditions will prevail if and in so far as these differ from these General Terms and Conditions. In all other respects, these General Terms and Conditions will continue to apply in full.
5. Should one or more of the provisions in these General Terms and Conditions be void or be declared null and void, all the remaining provisions of these General Terms and Conditions will remain fully applicable.

Article 3 Amendments

1. Amendments to the contract of sale and deviations from these General Terms and Conditions will only be valid if these have been agreed on by the Buyer and Supplier in writing.
2. If amendments lead to an increase or decrease of the costs, any resulting change in the purchase price must be agreed upon between the parties in writing.

Article 4 Prices

1. Quotations submitted by the Supplier will only be binding on the Supplier for a reasonable period of time, unless explicitly agreed otherwise in writing. Prices stated in quotations are exclusive of VAT, import and export duties and any duties and/or other taxes or levies which may be imposed by the government. Prices stated in quotations will only be binding if the quotation is followed, within a reasonable period of time, by an order in which the quotation is accepted in full.
2. In the event that, after the Agreement has been concluded and before it has been performed in full, any changes occur in the cost factors of the Supplier (including the prices of equipment and raw materials, energy prices, exchange rates, interest charges, wages, etc.), in the broadest sense, these may be passed on to the Buyer, with due observance of any statutory provisions pertaining thereto, unless all this has been excluded by the parties in the quotation or in an order confirmation.
3. If cost-determining factors are subject to an increase after the Supplier has accepted an order, the Supplier will be entitled to charge the Buyer an increase of the cost price as a result thereof, calculated in accordance with the cost accounting that is usually applied in its business.
4. In case of an increase of more than 10% of the cost price within three months of the conclusion of the agreement, the Buyer will be entitled to terminate the agreement, unless the Supplier is still willing to perform the agreement subject to the original conditions.

Article 5 Packaging and shipment

1. The Supplier undertakes towards the Buyer that it will package the goods properly and secure them in such a way that they reach their destination in good condition in case of normal transport, unless the nature of the goods precludes this and/or if the Supplier's customary packaging is not used at the Buyer's explicit request.
2. The risk of the goods will pass at the time that the Supplier transfers the control of the goods to the Buyer. If the goods are collected by or on behalf of the Buyer, the risk will pass at the time that the Buyer has signed for receipt of the goods.
3. If the goods are delivered by the Supplier, transfer of the goods will take place at the time that the goods are made available to the Buyer at the agreed delivery address. The parties will specify in the agreement which party is to unload the goods.
4. The Buyer undertakes to handle the packaging material as prescribed by environmental regulations and the Supplier will not accept any liability in this respect.
5. The Supplier will deliver the goods on or will send them for delivery to the agreed location or locations in the manners specified in the order or agreed on afterwards.

Article 6 Packaging material

1. Packaging material that can be reused will be charged separately on the invoice by the Supplier, together with the delivered Products.
2. With respect to packaging material, as referred to in the first paragraph, which is returned at the expense of the Buyer, the Supplier will send the Buyer a credit invoice as soon as possible after receipt.
3. The Buyer undertakes to handle the packaging material as prescribed by environmental regulations and the Supplier will not accept any liability in this respect.

Article 7 Delivery dates

1. The delivery date will be stated by the Supplier as an estimate. If a delivery period has been agreed, this will commence on the date on which the Buyer confirms the order. Delivery dates stated by the Supplier are never to be regarded as strict deadlines. Failure to meet the delivery date and/or period will in no event entitle the Buyer to damages or termination.
2. In the event of on-call delivery, the Supplier will have the right, if delivery has not, or not fully, been taken by or on behalf of the Buyer within three months of the order, to demand in writing that the Buyer state a period of time within which delivery of the total quantity will have been taken. The Buyer will be obliged to comply with this demand within 8 days, failing which the Supplier may store the Products at the expense of the Buyer, while the Supplier will at such time have the right to immediately demand payment in full.
3. The Supplier will be entitled to have third parties make deliveries. The Supplier will be entitled to make partial deliveries to the Buyer. Each partial delivery may be invoiced separately to the Buyer and the Supplier may require payment in advance of such delivery.

Article 8 Delivery and risk

1. Upon delivery, the ownership and risk of the goods will pass to the Buyer, subject to the provisions of the following paragraph.
2. As long as the Buyer has not paid the full amount of the purchase price and any additional costs or has not provided security in that respect, the Supplier will retain ownership of the goods. In that case, ownership will pass to the Buyer as soon as the Buyer has fulfilled its obligations towards the Supplier.
3. Irrespective of the payment conditions set forth in art. 12 of these conditions, the Supplier will be authorised,

if the Supplier has reasonable doubts, or reasonable doubts arise, about the payment capacity of the Buyer, to suspend delivery of the products. Furthermore, the Supplier will be entitled to suspend delivery if the outstanding amount in sales invoices of the Buyer is, or becomes, higher than the credit limit applicable to it, all until the Buyer has, within a period to be determined by the Supplier, provided sufficient security for payment and/or fully paid the outstanding invoices. If the Buyer fails to comply within the term set, it will immediately be in default. In such event, the Supplier will be entitled to terminate the agreement with the Buyer and to recover its damage from the Buyer. The Buyer will be liable for any loss suffered by the Supplier as a result of the delayed delivery.

4. Unless agreed otherwise in writing, delivery will take place ex warehouse, in which case the Buyer will be obliged, at its expense, to unload the products upon their arrival at the agreed address or at the location that a vehicle can reach via properly accessible grounds. From the time that the products are ready for unloading, they are at the Buyer's risk.
5. The Supplier will be entitled to have third parties make deliveries.
6. The Products will be deemed to have been delivered, and to have been accepted by the Buyer, and the risk with regard to the Products delivered will pass to the Buyer:

- In the event of delivery ex factory: as soon as the Products have been loaded into or onto the means of transport designated for transporting the Products to the Buyer. In the event that delivery ex factory is required on a ship, this must be explicitly agreed on in writing.

- In the event of delivery ex works (whether or not on demand): as soon as the Products have been supplied and/or unloaded at the Buyer's place of work or warehouse, provided that this is located on a surfaced road, in which respect the means of transport (with trailer or semi-trailer) must at all times be able to reach and leave the place of work or warehouse in a normal manner and with a full load on a road that is in proper condition – such at the discretion of the carrier. Unloading must take place immediately after arrival. In the event that unloading must take place in more than one unloading area to be designated by the Buyer, a minimum amount of EUR 150, or an amount to be determined by the Supplier at a later date, may be charged to the Buyer by the Supplier by way of transport costs for each additional unloading area.
- 7. If the Supplier and the Buyer have agreed that the Supplier will arrange, or have third parties arrange, the transport of the Products, the risk of storage, loading, transport and unloading will rest with the Buyer. The Buyer can take out insurance against those risks.

Article 9 Investigation and guarantee

1. The Buyer will be obliged to inspect the delivered goods at the time of delivery, but in any case within three working days of delivery. At such time, the Buyer must inspect whether the quality and quantity of the delivered goods are in accordance with what was agreed, or at any rate satisfy the relevant requirements of standard business practice. Complaints about the goods delivered must be reported to the Supplier in writing immediately, but no later than 14 days after the Buyer has, or could reasonably have, discovered the defect, quoting the order number and reasons for the complaints.
2. The Supplier guarantees that, for a period of 5 years after delivery, the products meet the description in the product information, which it most recently made available to the Buyer. Unless explicitly stated otherwise therein, the Supplier will not warrant the information stated in certificates issued by third parties that is not in accordance with the product information provided by the Supplier.
3. The Supplier's liability will be limited to repair free of charge of a defective product or replacement of that product, or a part thereof, or a refund of the purchase price. Costs for storage, assembly, dismantling and other costs will remain payable by the Buyer and may never be recovered from the Supplier.
4. The Supplier will not be obliged to provide any guarantee:

- if the Buyer does not fully or in due time fulfil its obligations under this agreement or any other agreement with the Supplier;
- if the Buyer processes, adapts, uses or stores the items delivered by the Supplier inexpertly or incorrectly or contrary to their designated use.

5. This guarantee does not cover any defects that are caused in full or in part by the raw materials, equipment or constructions selected by the Buyer or imposed on the Supplier by any third party or as a result of new government regulations.
6. If the guarantee provided by the Supplier concerns an item manufactured by a third party, the guarantee will be limited to the guarantee provided by the manufacturer of the item.

Article 10 Quality, inspection, acceptance

1. If and in so far as no explicit conditions have been agreed on with regard to the quality of the Products to be delivered, the Buyer may only claim such quality that corresponds to that which is customary in the business.
2. In the event of rejection of the Products delivered or to be delivered, the Supplier will have the right to demand a re-inspection by a recognised inspection institution to be appointed by the Supplier in consultation with the Buyer. The Buyer will provide full cooperation in this respect. The samples to be used for this purpose must be taken and forwarded in the presence of the Supplier or the Supplier's authorised representative. The costs of the re-inspection referred to in this article will be borne by the party declared at fault.
3. In case of delivery ex factory, acceptance of the Products will be deemed to have taken place upon shipment at the request of, with the permission of, or on behalf of the Buyer. In case of delivery ex works or warehouse, the recipient must sign the acceptance on the road waybill, or have such signed, in acknowledgement of receipt. If acceptance does not take place immediately after arrival, acceptance will be deemed to have taken place by the mere delivery on-site, except in the case of objections as referred to in Article 11.3.

Article 11 Complaints

1. The Buyer will not be entitled to complain with respect to Products that have been fully or partially adapted or processed.
2. A road waybill, delivery note or similar document provided on delivery of the Products will serve as evidence of delivery and will be deemed to correctly represent the quantity of the Products, unless the contrary is proved by the Buyer. The above will not affect the right of the Supplier to prove delivery in another manner than by providing the aforementioned documents.
3. After such a complaint has been lodged, the Supplier will be given the opportunity to examine the Products; the Buyer will provide full cooperation in this respect. Complaints cannot be lodged with regard to Products that cannot be examined by the Supplier. Products cannot be returned by the Buyer without the permission of the Supplier. Complaints cannot be lodged with regard to Products that are returned without the permission of the Supplier.
4. The Buyer may only base claims against the Supplier on objections due to quality defects of the Products, or differences in dimensions – in so far as such defects and/or differences can be discovered by the Buyer immediately on delivery by means of an inspection – if the Buyer informs the Supplier of the existence of such objections immediately (within not more than 14 days of delivery), in writing.
5. Submission of a complaint will never discharge the Buyer from its payment obligations in respect of the Supplier.

Article 12 Payment and provision of security

1. In addition to the price for the goods, the purchase price also includes the costs for packaging, transport and costs of delivery on-site by the Supplier.
2. Payment by the Buyer must be effected without discount or setoff within 30 days of the invoice date by means of a giro transfer to the bank account number stated on the invoice, unless agreed otherwise in writing.
3. If the Buyer does not fulfil its payment obligations in due time and does not comply with a notice of default with a time-limit of one week, the Supplier will be authorised to consider the contract of sale terminated without judicial intervention. In that case, the Buyer will be liable for the damage or loss suffered by the Supplier, consisting, among other things, of loss of profits, transport costs and the costs of the notice of default. If, in case of breach

General Terms and Conditions of Delivery and Payment

of contract by the Buyer, the Supplier takes extrajudicial measures, the costs thereof will be payable by the Buyer. These costs will be 10% of the invoice amount, with a minimum of €150 per delivery or invoice, all this at the Supplier's discretion. In addition, without any demand or notice of default being required, the Buyer will owe interest equal to the statutory interest, but at least 1.5% a month on the sum still outstanding, to be calculated from the 10th day following the invoice date. All judicial or extrajudicial costs incurred for the collection will be payable in full by the Buyer. 4. Payments made by the Buyer will always first be used to pay all outstanding interest and costs and subsequently to pay all invoices due and payable and any debts of whatever other nature that have been outstanding for the longest period of time, even if the Buyer states that the payment is for later invoices or debts. 5. Any payment discounts agreed on in writing will be cancelled if the payments have not been received within the term of payment (agreed on in writing at a later date). 6. Any objections to the invoice must be lodged with the Supplier in writing within 8 days of receipt of the invoice. After the expiry of this period, the Buyer will be deemed to have agreed to the invoice and objecting to the invoice will no longer be possible.

Article 13 Extended retention of title and right of pledge

1. All Products delivered by the Supplier will remain the Supplier's property until the Buyer fulfils all of its contractual obligations towards the Supplier under the contract of sale, including the Buyer's obligations on account of a failure to fulfil such contracts of sale. This obligation also applies in case the Products are resold. 2. The Buyer will not be authorised to pledge any items covered by the retention of title as long as the ownership of the Products delivered has not passed to the Buyer. 3. The Buyer has irrevocably authorised the Supplier, in the event that the Buyer does not fulfil the payment obligations or any other obligations or if such is imminent, to enter the business premises of the Buyer or of a third party without any prior notice and to do all that is necessary to repossess the Products sold to the Buyer. 4. In the event of third-party attachment of the items delivered subject to retention of title, or if any third parties wish to establish or exercise any rights in respect of such items, the Buyer will be obliged to notify the Supplier of this immediately. 5. The Buyer undertakes to insure and keep insured the items delivered subject to retention of title against fire, explosion damage, water damage and theft and to allow inspection of the insurance policy on demand.

Article 14 Liability

1. If the Supplier should be found liable, its liability will be limited to the provisions of this article. 2. If the Supplier should be liable for direct damage or loss, such liability will be limited to the sum that the Supplier invoiced to the Buyer in respect of the Product and the load. In addition, the damage or loss will furthermore be limited to the sum that its liability insurer pays out in that case. 3. The Supplier will not be liable for any consequential damage or loss sustained by the Buyer, which also includes immaterial damage, trading loss, environmental damage or resulting damage or loss. 4. The Buyer will forfeit its rights vis-à-vis the Supplier, will furthermore be liable for all damage, and will indemnify the Supplier against any third-party claims in respect of damages if and to the extent:

- That such damage is the result of inexpert use and/or use contrary to instructions, recommendations, user instructions or acts on the part of the Supplier and/or inexpert storage of the Products delivered;
- That such damage is the result of errors, inadequacies or inaccuracies in data, materials, information carriers, etc., provided and/or required by or on behalf of the Buyer to the Supplier.

5. The limitations of liability for direct damage or loss included in these conditions will not apply if the damage or loss can be attributed to an intentional act or gross negligence on the part of the Supplier or its employees. 6. The Buyer will indemnify the Supplier against all such claims of any nature whatsoever as third parties may assert against the Supplier in respect of any damage suffered or to be suffered beyond the Supplier's liability under this article, including but not limited to the situation where the Buyer is declared bankrupt. 7. The Supplier will, in the event of a failure to fulfil its obligations arising from any agreement or a failure to do so in a timely fashion, only be obliged, at the Supplier's option, to either (I) redeliver the Products delivered, (II) credit the Buyer in respect of the relevant delivery or part thereof or (III) cancel the agreement in consultation with the Buyer.

Article 15 Force Majeure

1. If a situation of force majeure should occur, the Supplier will be entitled to terminate the agreement or to suspend the delivery period. 2. Situations of force majeure on the part of the Supplier exist if the Supplier is prevented, after conclusion of the contract of sale, from fulfilling its obligations arising from this agreement or from carrying out the preparations involved due to war, threat of war, civil war, terrorism, riots, acts of war, fire, water damage, floods, strikes, sit-down strikes, lockouts, import and export impediments, government measures, machine defects, power failures, all this in the Supplier's own company as well as in the company of third parties from which the Supplier either fully or partially obtains the required equipment or raw materials, and also in respect of storage or during transport, whether or not under its control, and furthermore for whatever other reasons arising through no fault of the Supplier or beyond its control. 3. If a situation of force majeure occurs that is of a temporary nature, the Buyer will be authorised to terminate or suspend the agreement. Upon termination of the agreement, the Buyer will only be entitled to compensation of any costs incurred by it. 4. If a situation of force majeure occurs while the agreement has already been performed in part and if the remaining delivery will be delayed by more than six months due to the force majeure, the Buyer will be authorised to either keep the part of the goods that has already been delivered and pay the purchase price due for it or to consider the agreement terminated, also for the part that has already been performed, subject to the obligation to return to the Supplier the goods already delivered to it in the same quantity, at the Buyer's expense and risk, if the Buyer can prove that it can no longer effectively use the part of the goods already delivered as a result of the failure to deliver the remaining goods.

Article 16 Termination and suspension

1. The Supplier will be entitled to suspend the fulfilment of its obligations or to terminate the agreement, if:

- The buyer does not fulfil its obligations pursuant to the agreement or does not do so completely;
- After concluding the agreement, circumstances of which the Supplier has become aware give it good reason to fear that the Buyer will not fulfil its obligations. If there is good reason to fear that the Buyer will fulfil only part of the obligations or will not fulfil these properly, suspension will be permitted only to the extent justified by the shortcoming;
- At the time of concluding the agreement the Buyer was requested to provide security for the fulfilment of its obligations pursuant to the agreement and said security has not been provided or is inadequate. As soon as security has been provided, the authority to suspend will lapse, unless this fulfilment has been delayed unreasonably.

2. Furthermore, the Supplier will be authorised to terminate, or cause the termination of, the agreement if any circumstances whatsoever occur of such a nature that they make fulfilment of the agreement impossible or, in accordance with standards of reasonableness and fairness, this can no longer be demanded or if any other circumstances whatsoever occur in respect of which the unaltered continuation of the agreement cannot in reasonableness be expected.

Article 17 Intellectual property and copyright

1. Without prejudice to the other provisions of these General Terms and Conditions, the Supplier will reserve the rights and powers conferred on the user pursuant to intellectual property law, including but not limited to copyright law. 2. The Buyer may not make any modifications to the items, unless the nature of the items delivered shows otherwise or unless agreed otherwise in writing with the Supplier. 3. All documents, such as designs, recommendations, reports, drawings, software, etc., provided by the Supplier will be destined exclusively for use by the Buyer and may not be reproduced, published or disclosed to any third parties

without the Supplier's prior consent, unless the nature of the documents provided indicates otherwise. 4. The Supplier reserves the proprietary rights to the documents provided such as drawings, films, software, etc., regardless of whether these have been provided to the Buyer or to third parties, unless agreed otherwise. 5. All documents, such as designs, sketches, drawings, films, software, digital and other files, etc., provided by the Supplier will be destined exclusively for use by the Buyer and may not be reproduced, published or disclosed to any third parties without the Supplier's prior consent, unless the nature of the documents provided indicates otherwise. 6. The Supplier reserves the right to use the increased knowledge as a result of the performance of the work for other purposes, to the extent that this will not cause any confidential information to be disclosed to third parties.

Article 18 Void and voided provisions

1. Should one or more of the provisions in these General Terms and Conditions be void or be declared null and void by the court, all the remaining provisions of these General Terms and Conditions will remain fully applicable and effective. 2. The parties will consult on the void or voided provision or provisions in order to agree a replacement arrangement, to the extent possible. Any such replacement provision will apply without prejudice to the other provisions of the General Terms and Conditions.

Article 19 Applicable law and jurisdiction

1. This agreement is governed by Dutch law, with the exclusion of the Vienna Sales Convention (CISG).

Article 20 Disputes

1. If further to their agreement or a further agreement and other acts in connection with the present agreement a dispute should arise between the parties as to Products from the Supplier, the parties will first negotiate to find a solution. A dispute on Products of the Supplier will be deemed to exist if the Buyer reports that it does by registered letter to the other party. 2. If a dispute within the meaning of paragraph 1 cannot be resolved by mutual consultation, the parties will jointly instruct a mediator to assist them in the resolution of the dispute. If the parties fail to reach agreement on the appointment of the mediator within three weeks of occurrence of a dispute, the chair of the Netherlands Mediation Institute will be requested to make a binding nomination. The costs of such mediation will be paid equally by the parties. 3. If it has proven impossible to resolve a dispute within the meaning of paragraph 1 by way of mediation, the dispute will be decided by the competent judge of the District Court in Arnhem, the Netherlands. 4. Without prejudice to the foregoing, the Supplier will be entitled to submit a dispute, if the nature of the dispute so requires, at the Supplier's discretion, directly to the jurisdiction of the competent judge of the District Court in Arnhem. These General Terms and Conditions have been filed with the Chamber of Commerce in Arnhem under number 11053542.

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