ON-ROOF INSULATION

Installation guidelines best wood SCHNEIDER®

www.schneider-holz.com

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Uncomplicated, fast & reliable – the team of best wood SCHNEIDER® deals with your requests.

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TABLE OF CONTENTS

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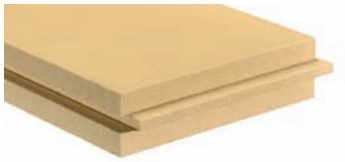
Wood fiber insulation boards

best wood TOP 140



TOP 140 is a pressure-resistant and weatherproof insulation board and can be mounted directly onto the rafters.

Where the roof pitch is ≥ 15°, it is classified as a rain-proof underlay in ZVDH class 3 (ZVDH: Federation of German Roofing Contractors). The application of nail sealing tapes is not necessary.

The board is hydrophobic throughout. The surface has an anti-slip latex coating and is weatherproof for up to 12 weeks' outdoor exposure.

Technical data

Denomination	WF-EN 13171-T5-DS(70,-)2-CS(10\Y)100-TR20-WS1,0-MU3-AFr75
Standard	EN13171
Density	140 [kg/m³]
Nominal value of thermal conductivity λ_D	0.040 [W/mK]
Rated value of thermal conductivity λ_B	0.042 [W/mK]
Compressive stress at 10 % compression	≥ 100 [kPa]
Water vapor diffusion resistance μ	3
E-module pressure E	≥ 1.45 [N/mm²]
Reaction to fire acc. to DIN EN 13501-1	E
Construction material class acc. to DIN 4102-1	B2
Materials	Wood fibers, PMDI gluing, paraffin, Latex
Specific heat capacity	2100 [J/kgK]
Fields of application acc. to DIN 4108-10	DAD-ds, DAA-ds, DEO-ds, WAB-ds, WZ, WH
Declared thermal conductivity acc. to SIA λ_D 279	0.040 W/(m·K)

Delivery options

Edge profiles	Tongue and groove
Thickness	80, 100, 120, 140, 160, 180, 200, 220, 240 mm
Length	2000 mm
Width	580 mm

best wood TOP 160

TOP 160 is a pressure-resistant and weatherproof insulation board and can be mounted directly onto the rafters.

Where the roof pitch is ≥ 15°, it is classified as a rain-proof underlay in ZVDH class 3 (ZVDH: Federation of German Roofing Contractors). The application of nail sealing tapes is not necessary.

The board is hydrophobic throughout. The surface has an anti-slip latex coating and is weatherproof for up to 12 weeks' outdoor exposure.

Technical data

Denomination	WF-EN 13171-T5-DS(70,-)2-CS(10\Y)150-TR25-WS1,0-MU3-AFr100
Standard	EN13171
Density	160 [kg/m³]
Nominal value of thermal conductivity λ_D	0.041 [W/mK]
Rated value of thermal conductivity λ_B	0.043 [W/mK]
Compressive stress at 10 % compression	≥ 130 [kPa]
Water vapor diffusion resistance μ	3
E-module pressure E	≥ 2.00 [N/mm²]
Reaction to fire acc. to DIN EN 13501-1	E
Construction material class acc. to DIN 4102-1	B2
Materials	Wood fibers, PMDI gluing, paraffin, Latex
Specific heat capacity	2100 [J/kgK]
Fields of application acc. to DIN 4108-10	DAD-ds, DAA-ds, DEO-ds, WAB-ds, WZ, WH
Declared thermal conductivity acc. to SIA λ_D 279	0.041 W/(m·K)

Delivery options

Edge profiles	Tongue and groove
Thickness	60, 80, 100, 120 mm
Length	2000 mm
Width	580 mm

best wood TOP 180

Technical data

Denomination	WF-EN 13171-T5-DS(70,-)3-CS(10\Y)150-TR30-WS1,0-MU3-AFr100
Standard	EN13171
Density	180 [kg/m³]
Nominal value of thermal conductivity λ_D	0.043 [W/mK]
Rated value of thermal conductivity λ_B	0.045 [W/mK]
Compressive stress at 10 % compression	≥ 150 [kPa]
Water vapor diffusion resistance μ	3
E-module pressure E	≥ 2.50 [N/mm²]
Reaction to fire acc. to DIN EN 13501-1	E
Construction material class acc. to DIN 4102-1	B2
Materials	Wood fibers, PMDI gluing, paraffin, Latex
Specific heat capacity	2100 [J/kgK]
Fields of application acc. to DIN 4108-10	DAD-ds, DAA-ds, DEO-ds, WAB-ds, WZ, WH
Declared thermal conductivity acc. to SIA λ_D 279	0.043 W/(m·K)

Delivery options

Edge profiles	Tongue and groove
Thickness	35, 50, 60, 80, 100, 120 mm
Length	2000, 2500 mm
Width	580 mm

TOP 180 is a pressure-resistant and weatherproof insulation board and can be mounted directly onto the rafters.

Where the roof pitch is ≥ 15°, it is classified as a rain-proof underlay in ZVDH class 3 (ZVDH: Federation of German Roofing Contractors). The application of nail sealing tapes is not necessary.

The board is hydrophobic throughout. The surface has an anti-slip latex coating and is weatherproof for up to 12 weeks' outdoor exposure.

best wood TOP 220

Technical data

Denomination	WF-EN 13171-T5-DS(70,-)3-CS(10\Y)180-TR30-WS1,0-MU3-AFr100
Standard	EN13171
Density	220 [kg/m³]
Nominal value of thermal conductivity λ_D	0.047 [W/mK]
Rated value of thermal conductivity λ_B	0.049 [W/mK]
Compressive stress at 10 % compression	≥ 180 [kPa]
Water vapor diffusion resistance μ	3
E-module pressure E	≥ 3.00 [N/mm²]
Reaction to fire acc. to DIN EN 13501-1	E
Construction material class acc. to DIN 4102-1	B2
Materials	Wood fibers, PMDI gluing, paraffin, Latex
Specific heat capacity	2100 [J/kgK]
Fields of application acc. to DIN 4108-10	DAD-ds, DAA-ds, DEO-ds, WAB-ds, WZ, WH
Declared thermal conductivity acc. to SIA λ_D 279	0.047 W/(m·K)

Delivery options

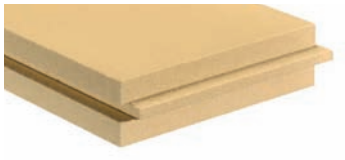
Edge profiles	Tongue and groove
Thickness	22, 35, 40, 50, 60 mm
Length	2000, 2500 mm
Width	580 mm

TOP 220 is a pressure-resistant and weatherproof insulation board and can be mounted directly onto the rafters.

Where the roof pitch is ≥ 15°, it is classified as a rain-proof underlay in ZVDH class 3 (ZVDH: Federation of German Roofing Contractors). The application of nail sealing tapes is not necessary.

The board is hydrophobic throughout. The surface has an anti-slip latex coating and is weatherproof for up to 12 weeks' outdoor exposure.

best wood MULTITHERM 110



MULTITHERM 110 is a light-weight pressure-resistant wood fiber insulation board and an excellent value of thermal conductivity with. It always requires a full-surface underlay for mounting.

MULTITHERM 110 can be universally applied in roofs. In combination with TOP 140/160/180/220, it is a cost-effective solution for high insulation thicknesses.

MUTLITHERM 110 is not weatherproof.

Technical data

Denomination	WF-EN 13171-T5-CS(10\Y)50-TR10-WS1,0-MU3-AFr50
Standard	EN13171
Density	110 [kg/m^3]
Nominal value of thermal conductivity λ_D	0.038 [W/mK]
Rated value of thermal conductivity λ_B	0.040 [W/mK]
Compressive stress at 10 % compression	≥ 50 [kPa]
Water vapor diffusion resistance μ	3
E-module pressure E	≥ 0.80 [N/mm^2]
Reaction to fire acc. to DIN EN 13501-1	E
Construction material class acc.to DIN 4102-1	B2
Materials	Wood fibers, PMDI gluing, paraffin
Specific heat capacity	2100 [J/kgK]
Fields of application acc. to DIN 4108-10	DAD-dm, DZ, DI-zg, WAB-dm, WH, WTR
Declared thermal conductivity acc. to SIA λ_D 279	0.038 W/(m·K)

Delivery options

Edge profiles	Square edge, shiplap joint, tongue + groove
Thickness	40, 60, 80, 100, 120, 140, 160, 180, 200, 220, 240 mm
Length	1500, 2000 mm
Width	600 mm (square edge and shiplap joint), 580 mm (tongue + groove)

best wood MULTITHERM 140

MULTITHERM 140 is a pressure-resistant wood fiber insulation board with an excellent value of thermal conductivity. It requires a full-surface underlay for mounting. MULTITHERM 140 boards from 80 mm upwards with tongue and groove can be mounted directly on rafters.

MULTITHERM 140 can be applied in roofs and walls.

MUTLITHERM 140 is not weatherproof.

Technical data

Denomination	WF-EN 13171-T5-CS(10\Y)100-TR20-WS1,0-MU3-AFr75
Standard	EN13171
Density	140 [kg/m^3]
Nominal value of thermal conductivity λ_D	0.040 [W/mK]
Rated value of thermal conductivity λ_B	0.042 [W/mK]
Compressive stress at 10 % compression	≥ 100 [kPa]
Water vapor diffusion resistance μ	3
E-module pressure E	1.45 [N/mm^2]
Reaction to fire acc. to DIN EN 13501-1	E or B-s1, d0 with best wood render system
Construction material class acc. to DIN 4102-1	B2
Materials	Wood fibers, PMDI gluing, paraffin
Specific heat capacity	2100 [J/kgK]
Fields of application acc. to DIN 4108-10	DAD-ds, DI-zg, DEO-ds, WAB-ds, WH, WTR
Declared thermal conductivity acc. to SIA λ_D 279	0.040 W/(m·K)

Delivery options

Edge profiles	Square edge, tongue + groove
Thickness	20, 40, 60, 80, 100, 120, 140, 160, 180, 200, 220, 240 mm
Length	1500, 2000, 2500 mm
Width	600 mm (square edge), 580 mm (tongue + groove)

best wood FLEX 50

Technical data

Denomination	WF-EN 13171-T2-MU1/2-AFr10
Standard	EN13171
Density	50 [kg/m³]
Nominal value of thermal conductivity λ_D	0.037 [W/mK]
Rated value of thermal conductivity λ_B	0.039 [W/mK]
Water vapor diffusion resistance μ	1-2
Reaction to fire acc. to DIN EN 13501-1	E
Construction material class acc. to DIN 4102-1	B2
Materials	Wood fibers, polyamide (bonding fiber), ammonium sulphate (flame inhibitor, natureplus-conform)
Specific heat capacity	2100 [J/kgK]
Fields of application acc. to DIN 4108-10	DAD-dk, DZ, DI-zk, WH, WI-zk, WTR
Declared thermal conductivity acc. to SIA λ_D 279	0.037 W/(m·K)

Delivery options

Edge profiles	Square edge
Thickness	40, 60, 80, 100, 120, 140, 160, 180, 200, 220, 240 mm
Length	1200 mm
Width	565 mm

Special format

Edge profiles	Square edge
Thickness	40, 60, 80, 100, 120, 140, 160, 180, 200, 220, 240 mm
Length	1200 mm
Width	490-825 mm

Flex 50 is the ideal insulation for the area between rafters for the roof and wooden framework constructions.

FLEX 50 is easy to install thanks to its good clamping effect.

best wood FIBRE

Technical data

Approval	ETA 16/0954
Recommended blow-in density, open blown Nominal value of thermal conductivity λ_D Rated value of thermal conductivity λ_B	**approx. 28 [kg/m³]** 0.041 [W/mK] 0.043 [W/mK]
Recommended blow-in density, closed cavities Nominal value of thermal conductivity λ_D Rated value of thermal conductivity λ_B	**35–38 [kg/m³]** 0.039 [W/mK] 0.041 [W/mK]
Water vapor diffusion resistance μ	1-2
Reaction to fire acc. to DIN EN 13501-1	E
Construction material class acc. to DIN 4102-1	B2
Materials	Wood fibers, fire retardants ammonium sulphate (natureplus-compliant)
Specific heat capacity	2100 [J/kgK]
Fields of application acc. to DIN 4108-10	DZ, DI-zk, WH, WI-zk, WTR
Declared thermal conductivity acc. to SIA λ_D 279	0.039 W/(m·K)

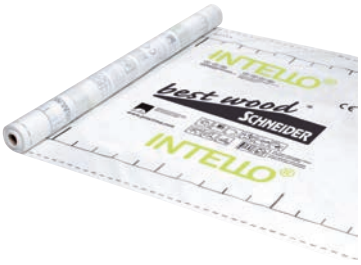
Delivery options

Bale size	800x420x320 mm

FIBRE ist the joint-free alternative to an insulation with insulation boards. It is an infilling insulation between rafters and can be used in the roof and in timber frame constructions.

Vapor barriers and airtight sealing membranes

INTELLO



High-performance vapor barrier and airtight sealing membrane for insulation between the beams with moisture-variable s_d value.

Field of application
Application as vapor barrier and airtight sealing membrane in roofs, slanted roof, walls, ceilings and floors. Suitable for combining with all matting and boarding fiber insulation.

Advantages
Maximum protection for the insulation construction, best protection against structural damage and mold, even in the event of unforeseeable entry of moisture. Particularly highly effective moisture-variable diffusion resistance in all climatic areas with more than 100 times spreading. s_d value greater 25 m in winter climate, s_d value 0.25 m with summer back diffusion.

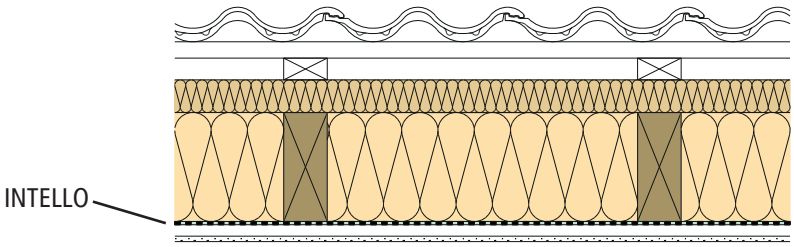
Technical data

Material	Tissue	
Fleece	Polypropylene	
Membrane	Polyethylene copolymer	
Color		White transparent
Weight per unit area	DIN EN 1849-2	85 ±10 g/m²
Thickness	DIN EN 1849-2	0.25 ±0.05 mm
Vapor diffusion resistance number µ	DIN EN 1931	30,000
s_d value	DIN EN 1931	7.50 ±0.25 m
s_d value moisture-variable	DIN EN ISO 12572	0.25 – >25 m
Reaction to fire	DIN EN 13501-1	E
Fire indicator (CH)	VKF	5.3
Tensile strength longitudinal/transverse	DIN EN 12311-2	130 N/5 cm / 105 N/5 cm
Expansion longitudinal/transverse	DIN EN 12311-2	90 % / 90 %
Tear growth resistance	DIN EN 12310-1	70 N / 70 N
Durability after artificial ageing	DIN EN 1296 / DIN EN 1931	passed
Temperature resistance		–40 °C to +80 °C
Coefficient of thermal conductivity		0.17 W/mK
CE label	DIN EN 13984	available

Delivery options

Item no.	Roll length	Roll width	Area	Roll weight
6101INTELLO150	50 m	1.50 m	75 m²	7 kg

Example of application INTELLO



New construction with insulation between rafters, setup 1, page 26.

INTELLO plus

Technical data

Material	Tissue	
Fleece	Polypropylene	
Membrane	Polyethylene copolymer	
Color		White transparent
Weight per unit area	DIN EN 1849-2	110 ±15 g/m²
Thickness	DIN EN 1849-2	0.40 ±0.1 mm
Vapor diffusion resistance number μ	DIN EN 1931	18,750
s_d value	DIN EN 1931	7.50 ±0.25 m
s_d value moisture-variable	DIN EN ISO 12572	0.25 – >25 m
Reaction to fire	DIN EN 13501-1	E
Fire indicator (CH)	VKF	5.3
Tensile strength longitudinal/transverse	DIN EN 12311-2	350 N/5 cm / 290 N/5 cm
Expansion longitudinal/transverse	DIN EN 12311-2	15 % / 15 %
Tear growth resistance	DIN EN 12310-1	200 N / 200 N
Durability after artificial ageing	DIN EN 1296 / DIN EN 1931	passed
Temperature resistance		–40 °C to +80 °C
Coefficient of thermal conductivity		0.17 W/mK
CE label	DIN EN 13984	available

Delivery options

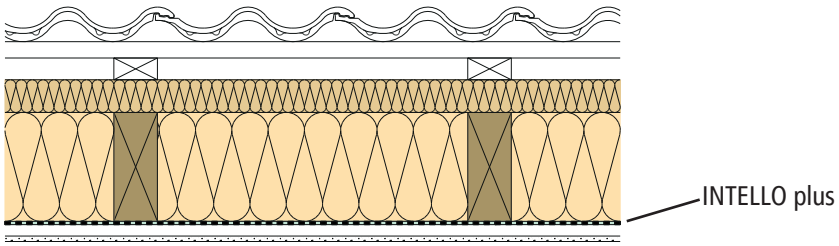
Item no.	Roll length	Roll width	Area	Roll weight
6101INTELLOPLUS	50 m	1.50 m	75 m²	9 kg

High-performance reinforced intelligent vapor check, suitable for all fibrous insulations. **Can also be used as a membrane in combination with air injected insulations.**

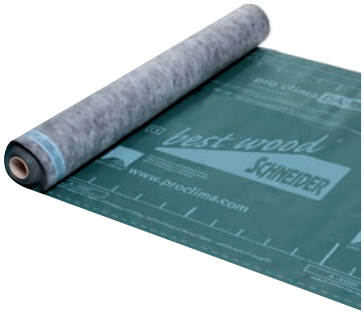
Field of application
Application as vapor barrier and airtight sealing membrane in roofs, slanted roof, walls, ceilings and floors. Suitable for combining with all matting and boarding fiber insulation.

Advantages
Maximum protection for the insulation construction, best protection against structural damage and mold, even in the event of unforeseeable entry of moisture. Particularly highly effective moisture-variable diffusion resistance in all climatic areas with more than 100 times spreading. Sd_d value greater 25 m in winter climate, $s_d$value 0.25 m with summer back diffusion. Very low coefficient of expansion when combined with spray insulation materials.

Example of application INTELLO plus



New construction with insulation between rafters, setup 1, page 26.



DA connect

Vapor barrier and airtight sealing membrane for insulation materials on or outside the load-bearing structure.

Field of application
Can be used as a weatherproof vapor barrier and airtight sealing membrane on linings, e.g. under insulation materials under rafters.

Advantages
Protection against climatic conditions during the construction phase. Water-resistant and waterproof, can be walked on, with the simultaneous function as vapor barrier and air sealant level.
DA connect with 2 integrated self-adhesive zones on the longitudinal edges.

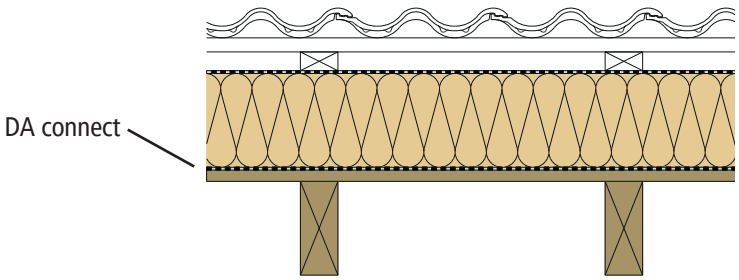
Technical data

Material	Tissue	
Sheet	Polypropylene	
Membrane	Polypropylene	
Color		green
Weight per unit area	DIN EN 1849-2	130 ±5 g/m²
Thickness	DIN EN 1849-2	0.45 ±0.05 mm
Vapor diffusion resistance number μ	DIN EN 1931	5,000
s_d value	DIN EN 1931	2.30 ±0.25 m
Reaction to fire	DIN EN 13501-1	E
Outdoor weather exposure		3 months
Water column	DIN EN 20811	> 2,500 mm
Permeability	DIN EN 1928	W1
Tensile strength longitudinal/transverse	DIN EN 12311-2	230 N/5 cm / 200 N/5 cm
Expansion longitudinal/transverse	DIN EN 12311-2	90 % / 90 %
Tear growth resistance	DIN EN 12310-1	120 N / 115 N
Durability after artificial ageing	DIN EN 1296 / DIN EN 1931	passed
Temperature resistance		–40 °C to +100 °C
Coefficient of thermal conductivity		0.17 W/mK
CE label	DIN EN 13984	available

Delivery options

Item no.	Roll length	Roll width	Area	Roll weight
6101DAConnect150	50 m	1.50 m	75 m²	11 kg

Example of application DA connect



New construction with on-roof insulation, setup 4, page 29.

DASAPLANO 0,01 connect

Technical data

Material	Tissue	
Protection and cover fleece	Polypropylene microfiber	
Membrane	Monolithic polymer mixture	
Color		light blue
Weight per unit area	DIN EN 1849-2	145 ±5 g/m²
Thickness	DIN EN 1849-2	0.50 ±0.05 mm
Vapor diffusion resistance number μ	DIN EN ISO 12572	20
s_d value	DIN EN ISO 12572	0.06 ±0.02 m
s_d value moisture-variable	DIN EN ISO 12572	0.01 m humidity-variable
Reaction to fire	DIN EN 13501-1	E
Outdoor weather exposure		14 days
Water column	DIN EN 20811	> 2,500 mm
Permeability	DIN EN 1928	W1
Tensile strength longitudinal/transverse	DIN EN 12311-1	270 N/5 cm / 200 N/5 cm
Expansion longitudinal/transverse	DIN EN 12311-1	55 % / 70 %
Tear growth resistance	DIN EN 12310-1	135 N / 135 N
Durability after artificial ageing	DIN EN 1296 / DIN EN ISO 12572	passed
Temperature resistance		–40 °C to +100 °C
Coefficient of thermal conductivity		0.17 W/mK
Airtightness	DIN EN 12114	performed
Sarking membrane/roof lining membrane	ZVDH product data sheet	USB-A / UDB-A
Temporary cover, suitable as ...	ZVDH	14 days | <10 °C: 7 days
CE label	DIN EN 13984	available

Delivery options

Item no.	Roll length	Roll width	Area	Roll weight
6101DASAPLANO0,01	50 m	1.50 m	75 m²	11 kg

Airtight sealing membrane for roof renovation from the outside; in case of an insulation with best wood TOP 140/160/180/220.

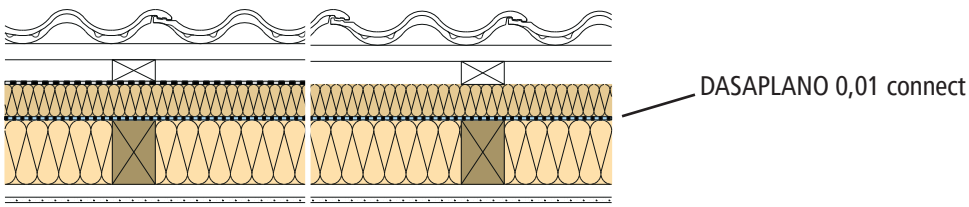
Field of application

3-ply airtightness membrane for external roof renovation when fully insulating the existing rafters. Lay over the rafters underneath an additional rafter insulation made from soft wood fiber sarking boards (best wood TOP).

Advantages

Simple installation on the surface over the rafters and insulation. Active moisture transfer for dry and protected thermal insulation constructions, air-tight and diffusion-open. Fast and secure bonding by way of integrated connect self-adhesive zones in the longitudinal direction of the sheeting.

Example of application DASAPLANO 0,01 connect



Renovation with 2:1 solution, setup 10, page 35.

DASATOP

Moisture-variable refurbishment vapour barrier for "Sub-and-Top" installation from the outside.

Field of application

DASATOP can be applied in the rafters on the existing inner cladding as well as over rafters by carrying out a "Sub-and-Top" installation. After the installation of the thermal insulation, the construction can be covered with diffusion-open materials such as best wood TOP 140/160/180/220.

Advantages

The refurbishment vapour barrier DASATOP is able to reduce the diffusion resistance variably until a minimum of 0.05 m. Therefore, the "Sub-and-Top" installation is possible. Under the thermal insulation, DASATOP has an s_d value of up to 2 m in winter climate. On the rafters, with influence of moisture, there is a reduction in the s_d value to 0.05 m. This low value is equivalent to the value of a diffusion-open underlay and keeps the rafters dry. The insulation and the rafters are perfectly protected against moisture.

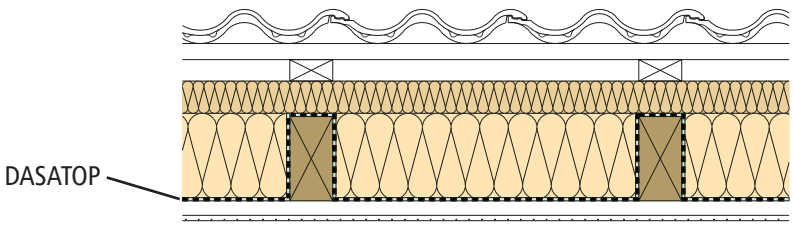
Technical data

Material	Tissue	
Protection and cover fleece	Polypropylene	
Membrane	Polyethylene copolymer	
Color		green
Weight per unit area	DIN EN 1849-2	90 ±5 g/m²
Thickness	DIN EN 1849-2	0.25 ±0.05 mm
Vapor diffusion resistance number μ	DIN EN 1931	6,400
s_d value	DIN EN 1931	1.60 ±0.25 m
s_d value moisture-variable	DIN EN ISO 12572	0.05 –2 m
Reaction to fire	DIN EN 13501-1	E
Outdoor weather exposure		4 weeks
Water column	DIN EN 20811	> 1,500 mm
Water resistance un-/aged*	DIN EN 1928	W1
Tensile strength longitudinal/transverse	DIN EN 12311-2	195 N/5 cm / 105 N/5 cm
Expansion longitudinal/transverse	DIN EN 12311-2	90 % / 90 %
Tear growth resistance	DIN EN 12310-1	110 N / 105 N
*) Durability after artificial ageing	DIN EN 1296 / DIN EN 1931	passed
Temperature resistance		–40 °C to +80 °C
Coefficient of thermal conductivity		0.17 W/mK
CE label	DIN EN 13984	available

Delivery options

Item no.	Roll length	Roll width	Area	Roll weight
6101DASATOP150	50 m	1.50 m	75 m²	7 kg

Example of application DASATOP



Renovation with sub and top solution, setup 13, page 38.

SOLITEX MENTO 3000 connect

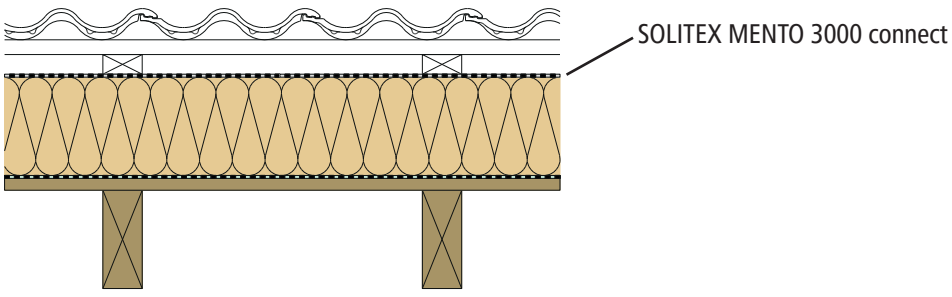
Technical data

Material	Tissue	
Protection and cover fleece	Polypropylene microfiber	
Membrane	Monolithic TEEE	
Color		anthracite
Weight per unit area	DIN EN 1849-2	150 ±5 g/m²
Thickness	DIN EN 1849-2	0.45 ±0.05 mm
Vapor diffusion resistance number μ	DIN EN ISO 12572	110
s_d value	DIN EN ISO 12572	0.05 ±0.02 m
Reaction to fire	DIN EN 13501-1	E
Outdoor weather exposure		4 months
Water column	DIN EN 20811	10,000 mm
Water resistance un-/aged*	DIN EN 1928	W1 / W1
Tensile strength longitudinal/transverse	DIN EN 12311-1	300 ±20 N/5 cm / 220 ±20 N/5 cm
Tensile strength longitudinal/transverse aged*	DIN EN 12311-1	240 ±20 N/5 cm / 165 ±20 N/5 cm
Expansion longitudinal/transverse	DIN EN 12311-1	70 ±20 % / 80 ±20 %
Expansion longitudinal/transverse aged*	DIN EN 12311-1	50 ±25 % / 65 ±25 %
Tear growth resistance	DIN EN 12310-1	210 ±30 N / 270 ±30 N
*) Durability after artificial ageing	DIN EN 1297 / DIN EN 1296	passed
Bending behaviour	DIN EN 1109	–40 °C
Temperature resistance		–40 °C to +120 °C
Coefficient of thermal conductivity		0.17 W/mK
Fall-through protection	GS-BAU-20 (10/2003)	passed
Sarking membrane/roof lining membrane	ZVDH product data sheet	USB-A / UDB-A
Temporary cover, suitable as ...	ZVDH	yes
CE label	DIN EN 13859-1	available

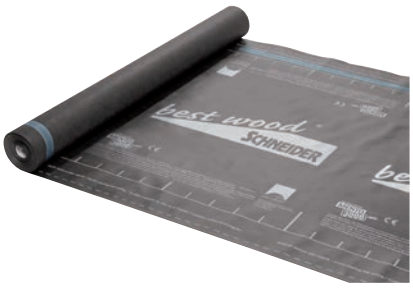
Delivery options

Item no.	Roll length	Roll width	Area	Roll weight
6101SOLITEXMENTO3000	50 m	1.50 m	75 m²	11 kg

Example of application SOLITEX MENTO 3000 connect



New construction with on-roof insulation, setup 4, page 29.



3-ply sarking and roof lining membrane.

Field of application
3-ply highly permeable roof lining and sarking membrane which is suitable for laying on boarding, MDF and fibreboard roof lining panels and insulating mats and boards.

Advantages
Highly permeable and at the same time, maximum resistance to driving rain, water column 10,000 mm. Optimum drying conditions for roof structures: non-porous TEEE functional membrane actively transports moisture outwards. Maximum ageing resistance and thermal stability thanks to the TEEE membrane 4 months of outdoor exposure. Suitable for temporary roof coverings as specified in the ZVDH product data sheet. Quick and reliable adhesion as a result of integrated connect self-adhesive zones along the length of the membrane.

Accessories

TESCON NAiDECK mono

One-sided nail sealing tape

developed and produced by pro clima

Field of application

Can be used as nail sealing tape under the counter-battening on sloping roofs. Suitable as an accessory for making temporary roofing as defined by the product data sheets of ZVDH for underlays.

Advantages

Excellent sealing effect – penetrates deep into the texture of underlays; water-resistant; meets ZVDH requirements; reinforcing fabric for reinforcement; contains no bitumen.

Material	Butyl rubber
Separating layer	Siliconized PE foil
Temperature resistance	Long-term –40 °C to +80 °C
Processing temperature	-10 °C to +35 °C

Item no.	Roll length	Roll width	Contents	KG / PU
6102TESCONNAIDEC	20 m	45 mm	12 rolls/carton	8 kg

TESCON NAiDECK mono patch

One-sided sticking plaster as nail sealing tape

developed and produced by pro clima

Field of application

One-sided nail sealing sticking plaster under the counter-battening on sloping roofs. TESCON NAiDECK mono patch is suitable as an accessory for making temporary roofing as defined by the product data sheets of ZVDH for sarking and roof lining membranes and as accessories for the production of construction period seals in accordance with SIA 232/1 together with underlays.

Advantages

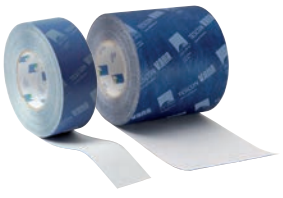
Extremely good sealing effect: The sealing compound is drawn into the hole when nailing / screwing down; easy pre-installation on the sarking/roof lining membranes or batten possible; material saving: Patch is only glued in the vicinity of the fastening material on the counter batten; reliable during construction work: Suitable for temporary roofing / construction period sealing

Material	Butyl rubber
Separating layer	Siliconized PE foil
Temperature resistance	Long-term –40 °C to +80 °C
Processing temperature	-10 °C to +35 °C

Item no.	Patch size	Contents	PU	KG / PU
6102TESCONNAIDECMONOPATCH	82 x 62 mm	300 patches/roll	4 rolls/carton	9.3 kg

TESCON VANA

Multi-purpose adhesive tape with fleece back



developed and produced by pro clima

Field of application

Can be used to form a secure and permanent seal on overlaps between foil and fleece membranes (vapor barriers and airtight sealing membranes, roof underlays and wall membranes) and joins between them. It is also suitable for sealing butt joints between wood-based material panels.

Advantages

Long-lasting sealed bonds, indoors and outdoors; with pliable fleece backing; can be torn off by hand; for airtight bonds in accordance with DIN 4108-7, SIA 180 and ÖNorm B8110-2; high initial adhesiveness: extremely high final adhesion; waterproof adhesive.

Backing	Special PP fleece
Separating layer	Siliconized paper
Temperature resistance	Long term –40 °C to +90 °C
Processing temperature	From –10 °C
Outdoor weather exposure	6 months

Item no.	Roll length	Roll width	Contents	KG / PU
6102TESCONVANA60	30 m	60 mm	10 rolls/carton	6 kg
			1 roll	0.6 kg
6102TESCONVANA150	30 m	150 mm	2 rolls	3 kg

ORCON F

Multi-purpose joint adhesive

developed and produced by pro clima

Field of application
Long-lasting, elastic joint adhesive for internal and external application.
Can be used to bond all types of vapor barriers and vapor retarders,
e. g. INTELLO, DB+, DA CONNECT, SOLITEX WA, SOLITEX MENTO 3000
as well as roof underlays and wall membranes on adjoining building components.

Advantages
Does not require a pressure lath; airtight bonds in accordance with DIN 4108-7, SIA 180 and ÖNorm B8110-2; permanently elastic whilst having exceptionally high strength and flexibility; enters deep into the substrate; suitable for frost resistant storage.

Material:	Dispersion on a basis of acrylic acid copolymers; frost resistant ethanol, contains no plasticizers or halogenated compounds
Processing temperature:	-10 °C to +50 °C
Temperature resistance:	Long term –20 °C to +80 °C
Storage:	Above –20 °C, store in a cool and dry place

Item no.	Cartridge	Range	Contents	KG / PU
6103ORCONF	310 ml	5 mm bead ~ 15 m	20 cartridges/box	7.5 kg
		8 mm bead ~ 6 m	1 cartridge	0.38 kg

TESCON PRIMER RP

Solvent-free primer, no drying required

developed and produced by pro clima

Field of application
Adhesive primer for wood, wood fiberboards, masonry, rendering and concrete. For preparing or improving the surface before the application of TESCON VANA adhesive tape and ORCON F joint adhesive.

Advantages
No drying required – bonding is possible directly in the wet primer on absorbent substrates; deep penetration; strengthens the substrate; solvent-free; suitable for application with all pro clima adhesive tapes.

Material	Acrylate copolymer, solvent free
Temperature resistance	-40 °C to +90 °C
Processing temperature	-10 °C to +45 °C
Storage	Store in a frost-free place

Item no.	Bottle	Contents per box	Coverage (with adhesive tape width of 60 mm)
6103TESCONPRIMER	1.0 l	6 bottles	approx. 75 m

TESCON sPRIMER

Sprayable primer, no drying time required, with rotating nozzle

developed and produced by pro clima

Field of application
Adhesive primer for wood, wood fiber boards, masonry, ceilings walls and floor boards for subsequent bonding with pro clima adhesive tapes such as TESCON VANA.

Advantages
Spray on straight from the can, no primer contamination in the container; deep penetration, strengthens the substrate; adhesive tapes can be affixed to absorbent substrates without drying time; versatile: can be used on dry and slightly moist substrates; processing in frosty conditions also possible

Material	Synthetic rubber
Temperature resistance	Long-term -25 °C to ~90 °C, short term to 100 °C (1h)
Processing temperature	-5 °C to +40 °C
Storage	Frost-free, cool and dry

Item no.	Can	Contents per box	Coverage (with adhesive tape width of 60 mm)
6103TESCONSPRIMER750	750 ml	6 cans	approx. 38 m

best wood **FDM TOP**

For bonding of vapor check and for sealing joints (dust-free and dry) in the roof insulation (best wood TOP 140/160/180/220), with joint widths of ≤ 5 mm. Even the smallest joints have to be closed with best wood FDM TOP before installing the counter batten.

Item no.	Delivery form	PU	UP
6170FDMTOP	310 ml cartridge	20 pcs./box	pc
		1 pieces	pc

Transportation and storage

When the materials are delivered, the system components supplied must be inspected in the scope of a goods received inspection, delivery notes and instruction leaflets must be kept for enquiries later on.

Please ensure that there is sufficient weatherproof storage space at the place of delivery. The material must be stored in a dry place and protected against UV rays and mechanical damage.

The best wood wood fiber boards are delivered in a horizontal position on pallets. A fork-lift truck or crane with suitable lifting tools must be available on site at the time of delivery to unload the materials pallet by pallet. The materials should be transported further in the same way. When using tension belts for securing the load, edge protectors are necessary in addition to prevent the board edges from being dented.

A maximum of two pallets may be stored on top of each other. Please make sure that there is a sufficient number of pieces of storage wood to prevent the uppermost or lowermost board from being dented.

Pallets with FIBRE and FLEX 50 must not be on top of each other.

General information and instructions for the installation of best wood SCHNEIDER wood fiber insulation boards

Cutting to size

best wood on-roof insulation is cut to size using suitable circular hand saws. Thicker insulation materials up to 240 mm can be cut using the insulation material saw IS 330 from FESTOOL. FLEX 50, for example, is cut to size using an alligator saw with a serrated blade. When sawing the boards, the connection of a suction device to the saw is recommended as well as wearing a dust mask to protect you against dust. At the same time, the BG guidelines and the regulations of TR GS 533 regarding dust suction must be observed.

Installation elements and feedthroughs

Installation elements and feedthroughs (e.g. for solar cables ...), for which temperatures > 80° have to be expected, must not be installed without further fire protection measures into the insulation material.

Maximum exposure to weather

TOP 140/160/180/220 is a wood fiber board that is hydrophobic throughout and its surface on the labelled side is equipped with an anti-slip latex coating.

After installation, **TOP 140/160/180/220 can be freely exposed to the weather for up to 12 weeks**. During this period of free exposure to the weather, please ensure that water fall on to it does not gather and can drain off in a controlled way. Installations at openings in the surface (e.g. roof windows, chimney penetrations …) must be sealed off with appropriate system components from pro clima (e.g. TESCON PRIMER RP and TESCON VANA adhesive tape).

Dirt on the surface (e.g. gathering of dust) must be removed to prevent puddles of water.

MULTITHERM 110/140 is a wood fiber board that is hydrophic throughout,**it cannot be freely exposed to the weather** and during the construction phase until the rain-proof underlay (by way of underlay sheeting or best wood TOP), it must be protected from direct exposure to the weather using a suitable covering.

Avoiding damage caused by moisture

In principle, every construction whether a new building or restoration should be examined for condensation by way of the Glaser method or a hygrothermic calculation, to prevent damage to the construction caused by damp.

Due to the high diffusion openness of the best wood wood fiber boards (TOP 140/160/180/220 and MULTITHERM 110/140 µ value = 3; FLEX 50 µ value = 1–2), a diffusion-open way of construction is very easy to implement. In addition, best wood wood fiber boards can absorb up to 20 % of the board weight in humidity, store it and also emit it without losing any of the insulation effect.

The rising humidity is passed on by the best wood wood fiber board capillary and led to the outside. This way, the planner and the builder are given the assurance of permanently avoiding dampness.

Increased humidity loads caused by construction material moisture caused by floor work, for example, must be dissipated in general by way of proper ventilation.

In case of roof renovations

In case of roof renovations with on-roof insulations ≥ 80 mm we recommend using the MULTITHERM 140 (tongue + groove connection) with lining membrane instead of the TOP, since large joints may develop due to uneven roof framework and thick on-roof insulations on the upper side of the roof.

Rain-proofness best wood MULTITHERM 110/140 with underlay

No rain-proof underlay can be established with MULTITHERM. For this reason, directly after laying MULTITHERM on the roof surface, a suitable underlay (e.g. SOLITEX MENTO 3000 from pro clima) must be laid. This underlay establishes the rain-proof substructure. In this case, the sheet manufacturer's instructions and boundary conditions must be observed.

Alternatively, a TOP can also be laid over the MULTITHERM to establish the rain-proof substructure.

Rain-proofness best wood TOP 140/160/180/220

As per the rules and standards of the ZVD, all TOP products are classified in the UDP-A class. Proof of the suitability was successfully provided with project number 1173/2011-BB at Holzforschung Austria.

With regard to the classification 1–6 according to the rules and standards of the ZDVH, all TOP products are classified in Class 3. The following variations are thus deemed as a rain-proof substructure:

- If the regular roof pitch of the roofing is observed or fallen short of by up to 4°, three increased requirements are possible.
- If the regular roof pitch of the roofing is fallen short of by 8°, two increased requirements are possible.
- If the regular roof pitch of the roofing is fallen short of by more than 8°, TOP can no longer be drawn on for rain-proofness. Sheet lining (e.g. WELDANO system) is necessary.

The number and necessity of additional increased requirements must be laid down by the planner or architect for the respective construction project at their own responsibility. These increased requirements result from, for example, the type of use, local regulations, climatic conditions, etc.

If the best wood TOP is applied as rain-proof underlay, the **minimum roof pitch is 15° in all cases**. It is not necessary to adhere the butt joints and the use of nail sealing tapes can also be avoided.

With the edge-to-edge hydrophobising and the symmetrical gross density profile of best wood TOP, it is possible to turn the boards over when installing them. A rain-proof substructure can be established with the underside, as well. If TOP is turned over, merely the anti-slip latex coating is no longer available.

For Austria, best wood TOP is deemed a rain-proof subroof according to ÖNORM B 4119. Proof of this is provided according to the expert opinion by the Holzforschung Austria.

Rain-proofness best wood TOP 140/160/180/220

SIA standard 232/1 exposures chapter 2.2.7

The demands on waterproofness of the subroof vary depending on the roofing system, pitch and length of a roof (rafter position) and external climatic influences. SIA 232/1 divides the subroofs into the following exposure groups:

Subroof for **normal exposure** (wood fiber boards tongue + groove) requirement: The subroof systems must be leak-proof for free-flowing water and under free exposure to the weather. Installation with best wood SCHNEIDER products: The rain-proofness can be established with a best wood TOP 140/160/180/220 from a minimum roof pitch of 15°. In a new building, from a board thickness of 80 mm, the installation joints must be sealed with best wood FDM TOP. When renovating a building, the installation joints for all board thicknesses must be sealed with best wood FDM TOP. Alternatively, when laying best wood MULTITHERM 110/140, the installation of an additional underlay, e.g. SOLITEX MENTO 3000, is possible.

Subroof for **increased exposure** (sealed underlay or wood fiber boards with sealed joints), requirement: Subroof systems must be waterproof up to 50 mm with accumulated water. The formation of water-proof joints and connections as well as sufficient resistance

against the load caused by the formation of ice must be guaranteed. Installation with best wood SCHNEIDER products: The rain-proofness can be established with a best wood TOP 140/160/180/220 from a minimum roof pitch of 15°. In both new buildings and renovated buildings, all installation joints must be sealed with best wood FDM TOP. Alternatively, when laying best wood MULTITHERM 110/140, the installation of an additional underlay, e.g. SOLITEX MENTO 3000, is possible.

Subroof for **extraordinary exposure** (jointless homogenous welded subroof sheeting) requirement: For extraordinary exposure, subroof systems must be water-proof against high water pressure or be expected (height of water > 50 mm). The formation of overlaps and connections by way of jointless, homogenous welding as well as the special sealing of penetrations must be guaranteed.
Installation with best wood SCHNEIDER products: Installation with best wood TOP 140/160/180/220 or best wood MULTITHERM 110/140 with additional jointless welded subroof sheeting, e.g. WELDANO.

SIA 232/1 also defines the necessary exposure groups for subroof systems with various roofing and roof pitches, see table 15, appendix D.

Installing best wood TOP 140/160/180/220 directly onto rafters

The installation of the first row begins at the bottom left-hand side of the roof surface perpendicular to the rafters. The tongue faces the roof ridge to ensure proper water drainage.

We recommend aligning the first row using an inking string to obtain a flush row. Alternatively, a kicker can be mounted on the rafters onto which the first row is laid. The tongue of the first board must be cut off.

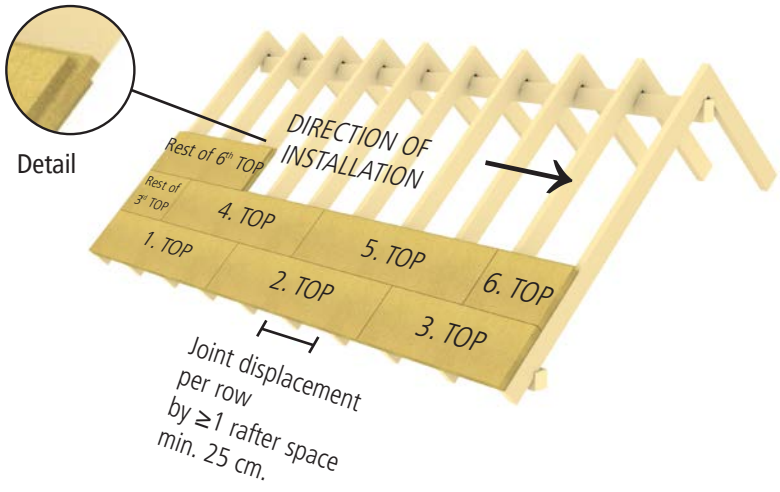
The next row is begun with the cut-off of the row before. The rest of the installation is staggered, the displacement of the joints from row to row is at least one rafter space and at least 25 cm. On the roof surface, every board must cover at least two rafters.

The boards are accurately fitted, laid in bearing and closely mitered. Joints must be avoided. Even the smallest of installation joints must be sealed with underlay adhesive sealant FDM TOP before installing the counter batten.

The TOP boards are secured by firstly fastening the boards with zinc coated clout nails or cleats onto the rafters.

After sealing the connections on the roof ridge, covings, hips, penetrations etc. with suitable system components (e.g. TESCON PRIMER RP and TESCON VANA adhesive tape), the counter batten is secured by screws, cleats, self-piercing screws or threaded nails through the board into the rafters to prevent it being pushed or pulled.

Damaged boards must not be used.



Maximum rafter distances

When installing best wood TOP 140/160/180/220 directly onto the rafters, the following maximum rafter distances must be observed:

best wood on-roof insulation		TOP 140	TOP 160	TOP 180	TOP 220
Maximum rafter distance [mm]	Minimum board length [mm]	Board thickness of the on-roof insulation [mm]			
≤ 750	2000	≥ 80	≥ 60	≥ 35	≥ 22
≤ 850	2000	≥ 100	≥ 80	≥ 50	≥ 35
≤ 1100	2500	≥ 140*	≥ 120*	≥ 80	≥ 50
≤ 1250	2500	≥ 200*	≥ 160*	≥ 100*	X

* Order-based production

Seal installation joints with best wood FDM TOP

Any joints ≥ 0.5 mm resulting from installing the boards must be sealed with best wood FDM TOP.

Boards can only be walked on via the rafters

Underlay boards from wood fiber are deemed as components that cannot be walked on according to the rules and standards of the ZVDH. TOP can only bear your weight on the rafters. The spaces between the rafters must not be walked on.

INFORMATION
All statutory safety regulations must be observed when working on roofs such as DGUV rule 101-016 (BGR 203).

CORRECT ✓

INCORRECT ✗

Installing best wood MULTITHERM 110/140 onto a full-surface underlay

The installation of the first row begins at the bottom left-hand side of the roof surface perpendicular to the rafters. When using a MULTITHERM with tongue and groove, the tongue faces the roof ridge.

We recommend aligning the first row using an inking string to obtain a flush row. Alternatively, a kicker can be mounted on the rafters onto which the first row is laid. When using MULTITHERM with tongue and groove or overlap, the tongue or overlap of the first row of boards must be cut off.

The next row is begun with the cut-off of the row before. The rest of the installation is staggered, the displacement of the joints from row to row is at least 25 cm.

The boards are accurately fitted, laid in bearing and closely mitered. Joints must be avoided. Installation joints must be sealed with suitable insulation material (e.g. wood fiber) to prevent thermal bridges.

The MULTITHERM boards are secured by firstly fastening the boards with zinc coated clout nails or cleats onto the rafters.

After laying the underlays and sealing the connections on the roof ridge, covings, hips, penetrations etc. with suitable system components (e.g. TESCON VANA adhesive tape), the counter batten is secured by screws, cleats, self-piercing screws or threaded nails through the MULTITHERM into the rafters to prevent it being pushed or pulled.

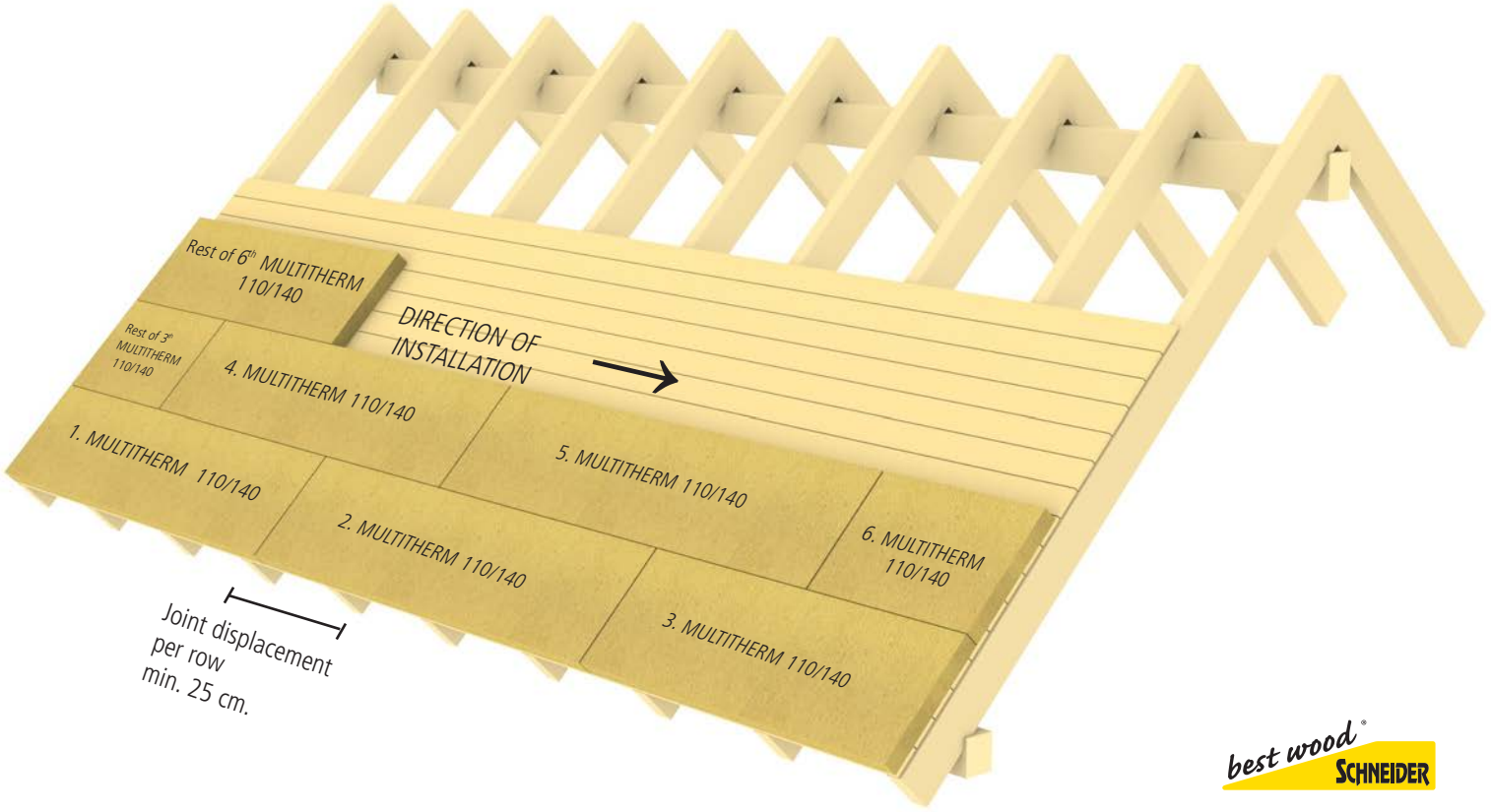
Damaged boards must not be used.

INFORMATION

MULTITHERM 110/140 cannot be freely exposed to the weather and during the construction phase until the rain-proof underlay is installed (by way of underlay sheeting or best wood TOP), it must be protected from direct exposure to the weather using a suitable covering.

MULTITHERM 140 boards from 80 mm upwards with tongue and groove can be mounted directly on rafters. The same conditions as with TOP 140 regarding installation and maximum rafter distances must be observed.

MULTITHERM 140 up to 60 mm and MULTITHERM 110 always require a full-surface underlay.



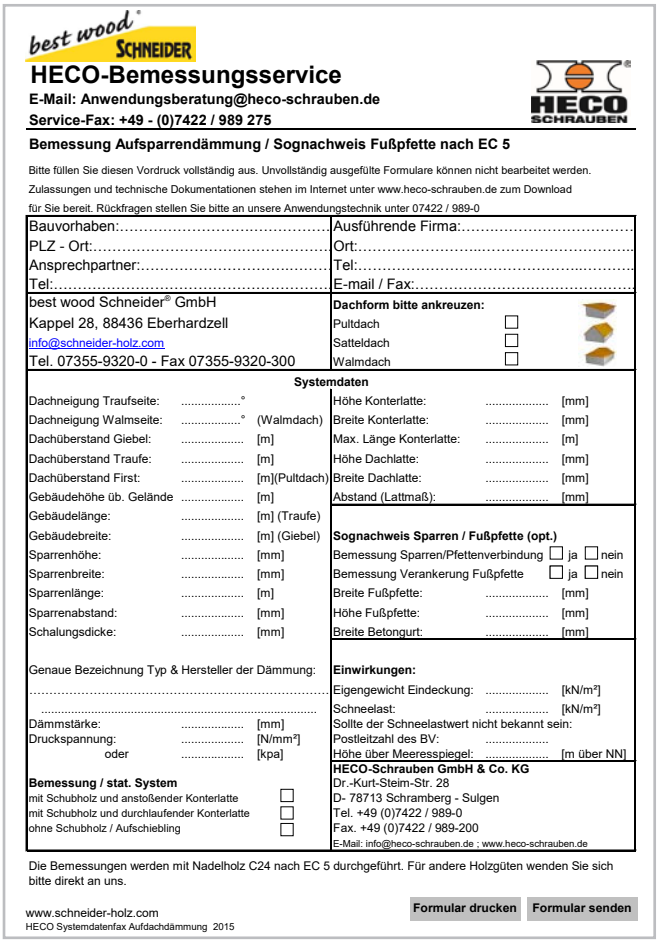
Statics and securing the on-roof insulation using a counter batten

best wood wood fiber boards are not weight-bearing components and must not generally be installed for structural loads.
The safe and permanent load transfer and the protection against wind and suction loads is executed by way of securing counter battens.

The counter battens are secured either by partially threaded screw or double-thread screws (counter-sunk screws) through the insulation directly into the rafters. With insulation thicknesses up to 120 mm, it is additionally possible to secure the counter batten onto the rafters using cleats, nail screws or screws with undercut.

A structural analysis as per EC5 is required for the necessary number and lengths of the fastening material. We hereby recommend having the structural analysis conducted by the ITW-Befestigungstechnik for cleats, nail screws and threaded nails. When using screws, our screws partner HECO draws up the structural analysis.

The cross-section of the counter batten is analyzed or stated depending on the fastening material when HECO and ITW do the calculation.



best wood SCHNEIDER

HECO-Bemessungsservice

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HECO SCHRAUBEN

Bemessung Aufsparrendämmung / Sognachweis Fußpfette nach EC 5

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Bauvorhaben:.....	Ausführende Firma:.....
PLZ - Ort:.....	Ort:.....
Ansprechpartner:.....	Tel:.....
Tel:.....	E-mail / Fax:.....
best wood Schneider® GmbH Kappel 28, 88436 Eberhardzell info@schneider-holz.com Tel. 07355-9320-0 - Fax 07355-9320-300	**Dachform bitte ankreuzen:** Pultdach ☐ Satteldach ☐ Walmdach ☐

Systemdaten

Dachneigung Traufseite:	.....°	Höhe Konterlatte:	..... [mm]
Dachneigung Walmseite:	.....° (Walmdach)	Breite Konterlatte:	..... [mm]
Dachüberstand Giebel:	..... [m]	Max. Länge Konterlatte:	..... [m]
Dachüberstand Traufe:	..... [m]	Höhe Dachlatte:	..... [mm]
Dachüberstand First:	..... [m](Pultdach)	Breite Dachlatte:	..... [mm]
Gebäudehöhe üb. Gelände	..... [m]	Abstand (Lattmaß):	..... [mm]
Gebäudelänge:	..... [m] (Traufe)		
Gebäudebreite:	..... [m] (Giebel)	**Sognachweis Sparren / Fußpfette (opt.)**	
Sparrenhöhe:	..... [mm]	Bemessung Sparren/Pfettenverbindung	☐ ja ☐ nein
Sparrenbreite:	..... [mm]	Bemessung Verankerung Fußpfette	☐ ja ☐ nein
Sparrenlänge:	..... [m]	Breite Fußpfette:	..... [mm]
Sparrenabstand:	..... [mm]	Höhe Fußpfette:	..... [mm]
Schalungsdicke:	..... [mm]	Breite Betongurt:	..... [mm]
Genaue Bezeichnung Typ & Hersteller der Dämmung:		**Einwirkungen:**	
.....		Eigengewicht Eindeckung:	..... [kN/m²]
.....		Schneelast:	..... [kN/m²]
Dämmstärke:	..... [mm]	Sollte der Schneelastwert nicht bekannt sein:	
Druckspannung:	..... [N/mm²]	Postleitzahl des BV:	.....
oder	..... [kpa]	Höhe über Meeresspiegel:	..... [m über NN]

Bemessung / stat. System
mit Schubholz und anstoßender Konterlatte ☐
mit Schubholz und durchlaufender Konterlatte ☐
ohne Schubholz / Aufschiebling ☐

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Die Bemessungen werden mit Nadelholz C24 nach EC 5 durchgeführt. Für andere Holzgüten wenden Sie sich bitte direkt an uns.

www.schneider-holz.com
HECO Systemdatenfax Aufdachdämmung 2015

Formular drucken | Formular senden

Corresponding input forms can be found in the website www.schneider-holz.com in the download area.

In order to create the structural proof of the counter batten fixation, the planner or the executor enters the data into the input forms. That way, the necessary fastening for each respective construction project can be calculated.

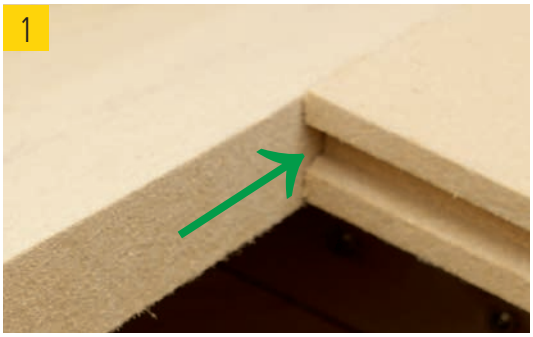
ITW
Paslode
DUO-FAST
haubold®
TOOLMATIC
HECO SCHRAUBEN

best wood SCHNEIDER

Connection ridge, rake and valley

If TOP is applied as rainproof underlay, all connections must be sealed with suitable sealing systems. We recommend the system products by pro clima.

Taking the ridge connection as an example, the sealing/adhesion is described in the following. Other connections e.g. at the hip, valley, chimney and penetrations are to be conducted in the same way.



(1) best wood wood fiber insulation must be laid free of joints and mitered to prevent thermal bridges in the insulation.

(2) The underlay must be dust-free to establish a permanent connection. Remove dust and sawdust from the underlay using a brush or compressed air.

(3) Apply TESCON PRIMER RP in the width of adhesive tape with a brush (4) to the TOP or use the application tool TENAPP (5).

(6) Stick TESCON VANA adhesive tape onto the joint to the dry or wet primer and press down firmly.

(7) The ridge joint is sealed and counter battens are secured to the wood fiber boards.

INFORMATION
As an alternative to the TESCON PRIMER RP, the TESCON sPRIMER can also be used. (page 17)

Eaves connection, underlay on best wood TOP 140/160/180/220

CORRECT ✓

The underlay is secured onto the eaves on the surface on the wood fiber boards with TESCON PRIMER RP and TESCON VANA adhesive tape.

INCORRECT ✗

The folded underlay prevents a clean tongue and groove connection of the TOP and unhindered water drainage.

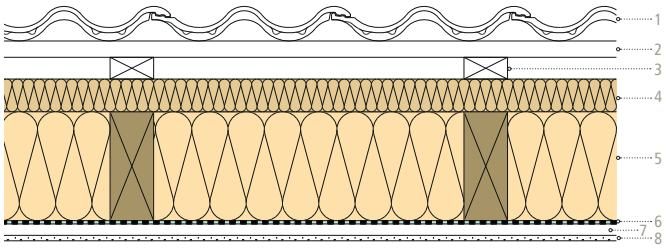
Laying the underlay in the first tongue and groove joint of the 1st row of installation must be avoided. This entails the risk that the underlay folds into the tongue and groove joint making it impossible to cleanly install the underlay as well as a perfect fitting of the boards.

In addition, there is the risk that the underlay sticks up at the tongue and groove joint and prevents a proper drainage of rainwater. Any puddles forming can thus cause damage to the boards. In addition, any water accruing on the underlay can drip into the tongue and groove joint and penetrate the inside of the roof.

The currently valid recommendations for application and installation by pro clima must be observed. You can find further connections and examples of execution on the pro clima homepage at www.proclima.com.

Setup 1: Insulation between rafters with best wood TOP on-roof insulation

pro clima INTELLO as air sealant and vapor barrier



Roof structure:

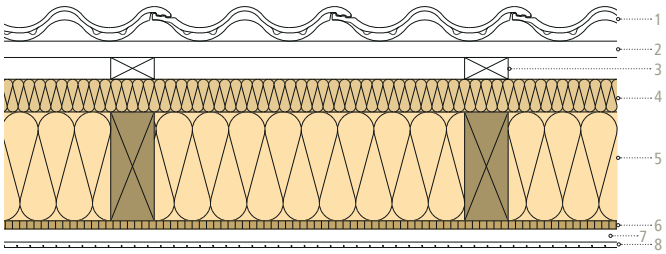
1 Roof tiles 2 Wooden lathework 30 mm 3 Counter batten 40 mm
4 best wood TOP 220/180/160/140 5 Rafters with best wood FLEX 50
6 Vapor barrier pro clima INTELLO 7 Substructure 24 mm 8 Staff board 10 mm

Construction values	U value with 10 % rafter proportion [W/m²K]					Phase shift [h]					Amplitude absorption [1/TAV]				
	best wood FLEX 50 insulation between rafters in mm														
	140	160	180	200	220	140	160	180	200	220	140	160	180	200	220
On-roof insulation															
TOP 220 22 mm	0.260*	0.232	0.211	0.195	0.180	8.7	9.5	10.2	11.0	11.7	6.5	8.0	9.7	11.9	14.3
TOP 220 35 mm	0.240	0.218	0.200	0.184	0.171	9.7	10.3	11.2	11.8	12.7	7.6	9.2	11.2	13.5	16.5
TOP 220 40 mm	0.234	0.213	0.196	0.181	0.168	10.0	10.8	11.5	12.3	13.0	8.1	9.9	11.9	14.5	17.6
TOP 220 50 mm	0.223	0.204	0.188	0.174	0.162	10.8	11.7	12.3	13.2	13.8	9.4	11.4	13.8	16.8	20.6
TOP 220 60 mm	0.213	0.196	0.181	0.168	0.157	11.7	12.3	13.2	14.0	14.7	11.0	13.4	16.4	20.0	24.4
TOP 180 35 mm	0.236	0.215	0.197	0.182	0.169	9.7	10.3	11.2	11.8	12.7	7.8	9.5	11.5	13.9	16.9
TOP 180 50 mm	0.218	0.200	0.184	0.171	0.160	10.7	11.5	12.2	13.0	13.8	9.6	11.6	14.1	17.2	21.1
TOP 180 60 mm	0.208	0.191	0.177	0.165	0.154	11.5	12.2	13.0	13.8	14.5	11.2	13.6	16.6	20.3	24.8
TOP 180 80 mm	0.190	0.176	0.164	0.153	0.144	13.0	13.7	14.5	15.2	16.0	15.9	19.4	23.7	29.0	35.3
TOP 180 100 mm	0.175	0.163	0.153	0.143	0.135	14.3	15.2	15.8	16.7	17.3	22.8	27.9	34.0	41.7	51.0
TOP 180 120 mm	0.162	0.152	0.143	0.135	0.127	15.7	16.5	17.2	18.0	18.7	32.7	40.0	48.8	59.9	73.0
TOP 160 60 mm	0.205	0.189	0.175	0.163	0.153	11.2	11.8	12.7	13.3	14.0	10.7	13.0	16.0	20.1	25.0
TOP 160 80 mm	0.187	0.173	0.162	0.151	0.142	12.7	13.5	14.2	15.0	15.7	15.2	18.6	22.7	27.8	33.9
TOP 160 100 mm	0.172	0.160	0.150	0.141	0.133	14.0	14.8	15.5	16.3	17.0	21.5	26.2	32.1	39.2	48.1
TOP 160 120 mm	0.159	0.149	0.140	0.132	0.125	15.3	16.0	16.8	17.5	18.3	30.3	37.0	45.2	55.6	68.0
TOP 140 80 mm	0.186	0.172	0.160	0.150	0.141	12.2	13.0	13.7	14.3	15.2	14.3	17.8	22.5	27.7	34.1
TOP 140 100 mm	0.170	0.159	0.149	0.140	0.132	13.7	14.3	15.2	16.0	16.7	20.2	24.6	30.1	36.8	45.0
TOP 140 120 mm	0.157	0.148	0.139	0.131	0.124	14.8	15.7	16.3	17.2	18.0	27.9	34.1	41.7	51.0	62.5
TOP 140 140 mm	0.146	0.138	0.130	0.123	0.117	16.2	16.8	17.7	18.2	19.2	38.6	47.2	57.8	70.9	86.2
TOP 140 160 mm	0.137	0.129	0.123	0.117	0.111	17.3	18.0	18.8	19.5	20.3	53.5	65.4	80.0	98.0	120.5
TOP 140 180 mm	0.128	0.122	0.116	0.110	0.105	18.5	19.3	20.0	20.8	21.5	73.5	90.9	111.1	137.0	166.7
TOP 140 200 mm	0.121	0.115	0.110	0.105	0.100	19.7	20.5	21.2	22.0	22.7	102.0	125.0	153.8	188.7	232.6
TOP 140 220 mm	0.114	0.109	0.104	0.100	0.096	21.0	21.7	22.5	24.0	24.0	140.8	175.4	217.4	263.2	312.5
TOP 140 240 mm	0.109	0.104	0.099	0.095	0.092	22.2	22.8	24.0	24.0	24.7	196.1	243.9	294.1	344.8	416.7

* Threshold values of EnEV not observed

Setup 2: Insulation between rafters with best wood TOP on-roof insulation

OSB as air sealant and vapor barrier



Roof structure:

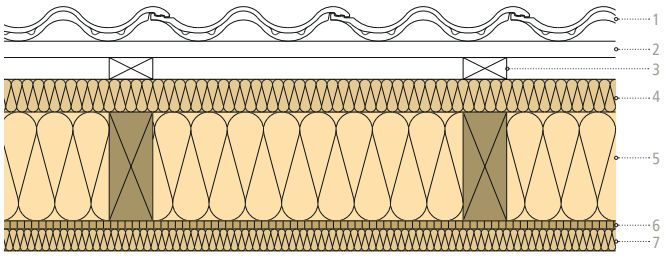
1 Roof tiles 2 Wooden lathework 30 mm 3 Counter batten 40 mm
4 best wood TOP 220/180/160/140 5 Rafters with best wood FLEX 50
6 OSB 15 mm 7 Substructure 24 mm 8 Staff board 10 mm

Construction values	U value with 10 % rafter proportion [W/m²K]					Phase shift [h]					Amplitude absorption [1/TAV]				
	best wood FLEX 50 insulation between rafters in mm														
	140	160	180	200	220	140	160	180	200	220	140	160	180	200	220
On-roof insulation															
TOP 220 22 mm	0.250*	0.226	0.206	0.190	0.176	9.7	10.5	11.2	12.0	12.7	13.7	16.6	20.1	24.2	29.4
TOP 220 35 mm	0.233	0.212	0.195	0.180	0.168	10.7	11.3	12.2	13.0	13.7	15.8	19.0	23.0	27.9	34.1
TOP 220 40 mm	0.228	0.208	0.191	0.177	0.165	11.0	11.8	12.5	13.3	14.2	16.9	20.2	24.6	29.9	36.5
TOP 220 50 mm	0.217	0.199	0.184	0.170	0.159	11.8	12.7	13.3	14.2	15.0	19.3	23.5	28.7	35.0	42.6
TOP 220 60 mm	0.208	0.191	0.177	0.165	0.154	12.7	13.5	14.2	15.0	15.7	22.9	27.9	34.0	41.5	50.8
TOP 180 35 mm	0.230	0.209	0.193	0.178	0.166	10.7	11.3	12.2	12.8	13.7	16.2	19.5	23.6	28.7	35.1
TOP 180 50 mm	0.213	0.195	0.180	0.168	0.157	11.7	12.5	13.2	14.0	14.8	19.8	24.0	29.2	35.7	43.7
TOP 180 60 mm	0.203	0.187	0.173	0.162	0.151	12.5	13.3	14.0	14.8	15.5	23.3	28.3	34.5	42.2	51.5
TOP 180 80 mm	0.186	0.172	0.161	0.150	0.142	14.0	14.7	15.5	16.2	17.0	33.1	40.3	49.3	60.2	73.5
TOP 180 100 mm	0.172	0.160	0.150	0.141	0.133	15.3	16.2	16.8	17.7	18.3	47.6	58.1	70.9	86.2	106.4
TOP 180 120 mm	0.159	0.149	0.140	0.133	0.125	16.7	17.5	18.2	19.0	19.7	68.5	83.3	102.0	125.0	153.8
TOP 160 60 mm	0.200	0.185	0.171	0.160	0.150	12.2	12.8	13.7	14.3	15.0	21.9	27.2	34.4	42.7	52.4
TOP 160 80 mm	0.183	0.170	0.158	0.149	0.140	13.7	14.5	15.2	16.0	16.7	31.7	38.8	47.2	57.8	70.4
TOP 160 100 mm	0.169	0.157	0.147	0.139	0.131	15.0	15.8	16.5	17.3	18.0	44.8	54.6	66.7	81.3	100.0
TOP 160 120 mm	0.156	0.146	0.138	0.130	0.124	16.3	17.2	17.8	18.7	19.3	63.3	77.5	94.3	114.9	140.8
TOP 140 80 mm	0.182	0.169	0.157	0.148	0.139	13.2	13.8	14.7	15.3	16.2	30.3	38.6	47.4	58.1	71.4
TOP 140 100 mm	0.167	0.156	0.146	0.138	0.130	14.7	15.5	16.2	17.0	17.7	42.0	51.3	62.5	76.3	93.5
TOP 140 120 mm	0.155	0.145	0.137	0.129	0.122	15.8	16.7	17.3	18.2	19.0	58.1	70.9	87.0	106.4	129.9
TOP 140 140 mm	0.144	0.136	0.128	0.122	0.116	17.2	17.8	18.7	19.3	20.2	80.6	99.0	120.5	147.1	181.8
TOP 140 160 mm	0.135	0.127	0.121	0.115	0.110	18.3	19.0	19.8	20.5	21.3	111.1	137.0	166.7	204.1	250.0
TOP 140 180 mm	0.127	0.120	0.114	0.109	0.104	19.5	20.3	21.0	21.7	24.0	153.8	188.7	232.6	285.7	344.8
TOP 140 200 mm	0.119	0.114	0.108	0.104	0.099	20.7	21.5	22.2	24.0	24.0	217.4	263.2	322.6	384.6	454.6
TOP 140 220 mm	0.113	0.108	0.103	0.099	0.095	21.8	24.0	24.0	24.0	24.5	303.0	357.1	416.7	500.0	588.2
TOP 140 240 mm	0.107	0.102	0.098	0.094	0.091	24.0	24.0	24.2	24.8	25.5	400.0	476.2	555.6	666.7	833.3

* Threshold values of EnEV not observed

Setup 3: Insulation between rafters with best wood TOP on-roof insulation

OSB as air sealant and vapor barrier with additional best wood ROOM 140 at insulation level



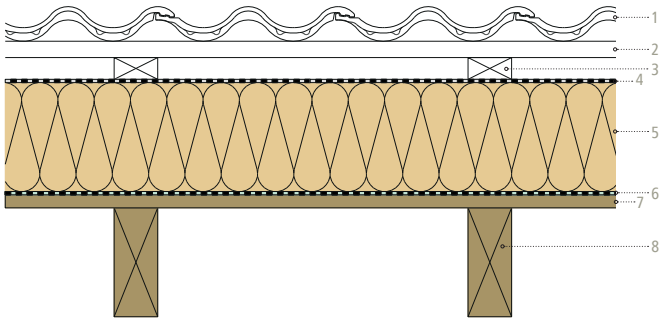
Roof structure:

1 Roof tiles 2 Wooden lathework 30 mm 3 Counter batten 40 mm
4 best wood TOP 220/180/160/140 5 Rafters with best wood FLEX 50
6 OSB 15 mm 7 best wood ROOM 140 in 40 mm

Construction values	U value with 10 % rafter proportion [W/m²K]					Phase shift [h]					Amplitude absorption [1/TAV]				
	best wood FLEX 50 insulation between rafters in mm														
	140	160	180	200	220	140	160	180	200	220	140	160	180	200	220
On-roof insulation															
TOP 220 22 mm	0.209	0.192	0.177	0.165	0.154	10.5	11.2	12.0	12.7	13.5	13.8	16.7	20.0	24.3	29.7
TOP 220 35 mm	0.197	0.182	0.169	0.158	0.148	11.5	12.2	13.0	13.7	14.5	15.8	19.0	23.1	28.2	34.4
TOP 220 40 mm	0.193	0.179	0.166	0.155	0.146	11.8	12.5	13.3	14.2	14.8	16.8	20.4	24.8	30.2	36.8
TOP 220 50 mm	0.186	0.172	0.160	0.150	0.141	12.7	13.3	14.2	15.0	15.7	19.5	23.7	28.8	35.2	42.9
TOP 220 60 mm	0.179	0.166	0.155	0.146	0.137	13.5	14.2	15.0	15.7	16.5	23.1	28.1	34.2	41.7	51.0
TOP 180 35 mm	0.195	0.180	0.167	0.156	0.146	11.3	12.2	12.8	13.7	14.5	16.2	19.5	23.8	28.9	35.3
TOP 180 50 mm	0.183	0.169	0.158	0.148	0.139	12.5	13.3	14.0	14.8	15.5	19.9	24.2	29.5	36.0	43.9
TOP 180 60 mm	0.175	0.163	0.153	0.143	0.135	13.3	14.0	14.8	15.5	16.3	23.4	28.6	34.8	42.4	51.8
TOP 180 80 mm	0.162	0.152	0.143	0.135	0.127	14.7	15.5	16.3	17.0	17.8	33.3	40.7	49.5	60.6	74.1
TOP 180 100 mm	0.151	0.142	0.134	0.127	0.120	16.2	16.8	17.7	18.3	19.2	48.1	58.5	71.4	87.7	106.4
TOP 180 120 mm	0.142	0.134	0.126	0.120	0.114	17.5	18.2	19.0	19.7	20.5	69.0	84.0	130.1	126.6	153.8
TOP 160 60 mm	0.173	0.161	0.151	0.142	0.134	12.8	13.7	14.3	15.2	15.8	22.6	28.6	35.2	43.1	53.2
TOP 160 80 mm	0.160	0.150	0.141	0.133	0.126	14.5	15.2	16.0	16.7	17.5	31.9	39.1	47.6	58.1	70.9
TOP 160 100 mm	0.149	0.140	0.132	0.125	0.119	15.8	16.5	17.3	18.0	18.8	45.2	55.2	67.1	82.6	101.0
TOP 160 120 mm	0.139	0.131	0.124	0.118	0.113	17.2	17.8	18.7	19.3	20.2	63.7	78.1	95.2	116.3	142.9
TOP 140 80 mm	0.159	0.149	0.140	0.132	0.125	14.0	14.7	15.3	16.2	16.8	31.7	39.1	47.8	58.8	72.5
TOP 140 100 mm	0.148	0.139	0.131	0.124	0.118	15.5	16.2	17.0	17.7	18.5	42.4	51.5	63.3	77.5	94.3
TOP 140 120 mm	0.138	0.130	0.123	0.117	0.112	16.7	17.5	18.2	19.0	19.7	58.8	71.9	87.7	107.5	131.6
TOP 140 140 mm	0.129	0.123	0.117	0.111	0.106	17.8	18.7	19.3	20.2	20.8	81.3	100.0	122.0	149.3	181.8
TOP 140 160 mm	0.122	0.116	0.110	0.105	0.101	19.2	19.8	20.5	21.3	22.2	112.4	137.0	169.5	208.3	256.4
TOP 140 180 mm	0.115	0.110	0.105	0.100	0.960	20.3	21.0	21.8	22.5	24.0	156.2	192.3	232.6	285.7	333.3
TOP 140 200 mm	0.109	0.104	0.100	0.096	0.092	21.5	22.2	24.0	24.0	24.2	217.4	270.3	322.6	370.4	454.5
TOP 140 220 mm	0.104	0.099	0.095	0.092	0.088	24.0	24.0	24.0	24.5	25.3	303.0	357.1	416.7	500.0	588.2
TOP 140 240 mm	0.099	0.095	0.091	0.087	0.084	24.0	24.2	25.0	25.7	26.3	384.6	476.2	555.6	666.7	833.3

Setup 4: On-roof insulation with best wood MULTITHERM

Additional underlay pro clima SOLITEX MENTO 3000 connect required on best wood MULTITHERM



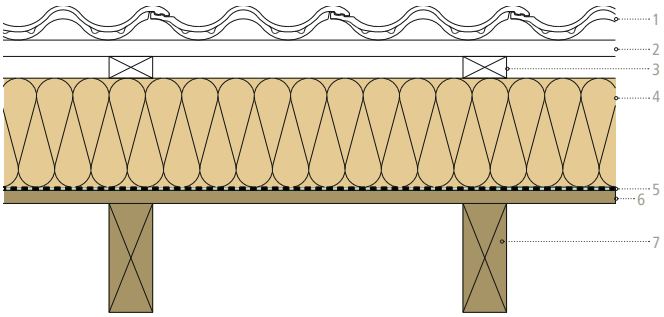
Roof structure:

1 Roof tiles 2 Wooden lathework 30 mm 3 Counter batten 40 mm
4 pro clima SOLITEX MENTO 3000 connect 5 best wood MULTITHERM 110/140
6 Vapor barrier pro clima DA connect 7 Facework 24 mm 8 Visible roof framework

Construction values	U value [W/m²K]	Phase shift [h]	Amplitude absorption [1/TAV]
	Insulation between rafters in mm		
	0	0	0
On-roof insulation			
MULTITHERM 110 160 mm	0.228	10.8	13.5
MULTITHERM 110 180 mm	0.204	12.0	17.7
MULTITHERM 110 200 mm	0.186	13.2	23.9
MULTITHERM 110 220 mm	0.170	14.2	32.2
MULTITHERM 110 240 mm	0.156	15.3	43.3
MULTITHERM 140 160 mm	0.242*	11.5	14.8
MULTITHERM 140 180 mm	0.217	12.8	20.4
MULTITHERM 140 200 mm	0.196	14.0	28.2
MULTITHERM 140 220 mm	0.180	15.2	38.9
MULTITHERM 140 240 mm	0.165	16.3	54.1

* Threshold values of EnEV not observed

Setup 5: On-roof insulation with best wood TOP

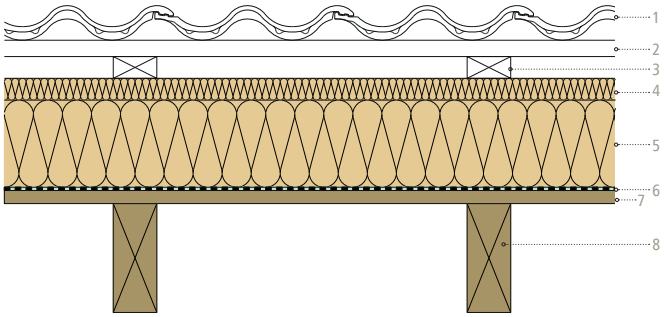


Roof structure:

1 Roof tiles 2 Wooden lathework 30 mm 3 Counter batten 40 mm
4 best wood TOP 140 5 Vapor barrier pro clima DA connect
6 Facework 24 mm 7 Visible roof framework

Construction values	U value [W/m²K]	Phase shift [h]	Amplitude absorption [1/TAV]
	Insulation between rafters in mm		
	0	0	0
On-roof insulation			
TOP 140 160 mm	0.242	11.7	14.1
TOP 140 180 mm	0.217	13.0	19.4
TOP 140 200 mm	0.197	14.2	26.8
TOP 140 220 mm	0.180	15.3	37.0
TOP 140 240 mm	0.166	16.5	51.3

Setup 6: On-roof insulation with best wood MULTITHERM and best wood TOP



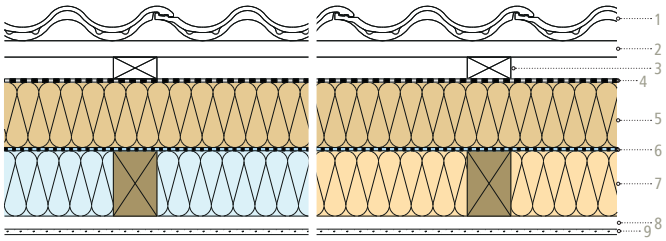
Roof structure:

1 Roof tiles 2 Wooden lathework 30 mm 3 Counter batten 40 mm
4 best wood TOP 220/180/160/140 5 best wood MULTITHERM 110
6 Vapor barrier pro clima DA connect 7 Facework 24 mm 8 Visible roof framework

Construction values	U value [W/m²K]					Phase shift [h]					Amplitude absorption [1/TAV]				
	best wood MULTITHERM 110 on-roof insulation over the facework in mm														
	160	180	200	220	240	160	180	200	220	240	160	180	200	220	240
On-roof insulation															
TOP 220 22 mm	0.207	0.187	0.171	0.158	0.146	12.3	13.5	14.7	15.7	16.8	16.5	22.1	29.7	40.0	54.1
TOP 220 35 mm	0.196	0.179	0.164	0.151	0.141	13.3	14.5	15.5	16.7	17.8	19.8	26.7	35.8	48.3	64.9
TOP 220 40 mm	0.192	0.175	0.161	0.149	0.139	13.7	14.8	16.0	17.0	18.2	21.4	28.7	38.8	52.4	70.4
TOP 220 50 mm	0.185	0.169	0.156	0.145	0.135	14.5	15.7	16.7	17.8	18.8	25.3	34.0	45.7	61.3	83.3
TOP 220 60 mm	0.178	0.164	0.151	0.141	0.131	15.3	16.3	17.5	18.7	19.7	30.2	40.7	54.6	73.5	99.0
TOP 180 35 mm	0.194	0.177	0.162	0.150	0.140	13.3	14.3	15.5	16.7	17.7	20.6	27.7	37.3	50.3	67.6
TOP 180 50 mm	0.182	0.167	0.154	0.143	0.133	14.3	15.5	16.7	17.7	18.8	26.3	35.3	47.4	63.7	87.0
TOP 180 60 mm	0.175	0.161	0.149	0.138	0.130	15.2	16.2	17.3	18.5	19.5	31.2	42.0	56.5	75.8	102.0
TOP 180 80 mm	0.162	0.150	0.140	0.130	x	16.5	17.7	18.7	19.8	x	44.4	59.9	80.6	108.7	x
TOP 180 100 mm	0.151	0.141	0.131	x	x	17.8	19.0	20.0	x	x	63.7	85.5	116.3	x	x
TOP 180 120 mm	0.142	0.132	x	x	x	19.2	20.3	x	x	x	90.9	123.5	x	x	x
TOP 160 60 mm	0.173	0.159	0.147	0.137	0.128	14.7	15.7	16.8	17.8	18.3	31.9	43.5	59.2	81.3	95.2
TOP 160 80 mm	0.160	0.148	0.138	0.129	x	16.2	17.3	18.5	19.5	x	43.1	57.8	77.5	105.3	x
TOP 160 100 mm	0.149	0.139	0.130	x	x	17.5	18.7	19.8	x	x	60.6	81.3	109.9	x	x
TOP 160 120 mm	0.139	0.130	x	x	x	18.8	20.0	x	x	x	85.5	114.9	x	x	x
TOP 140 80 mm	0.159	0.147	0.137	0.128	x	15.7	16.7	17.7	19.0	x	44.1	59.9	82.0	100.0	x
TOP 140 100 mm	0.148	0.138	0.129	x	x	17.2	18.3	19.3	x	x	57.5	76.9	104.2	x	x
TOP 140 120 mm	0.138	0.129	x	x	x	18.3	19.5	x	x	x	79.4	106.4	x	x	x
TOP 140 140 mm	0.130	x	x	x	x	19.7	x	x	x	x	109.9	x	x	x	x

x According to the ETA-11/0284 screws approval, the thermal insulation may only be up to a maximum of 300 mm.

Setup 7: 1:1 solution with pro clima and on-roof insulation best wood TOP



Roof structure:

1 Roof tiles 2 Wooden lathework 30 mm 3 Counter batten 40 mm
4 Possible in addition: pro clima SOLITEX MENTO 3000 connect
5 best wood TOP 160/140 6 Airtight sealing sheet pro clima DASAPLANO 0,01 connect 7 Rafters with fibrous rafter insulation e.g. rock wool WLG 040 or best wood FLEX 50 8 Substructure 24 mm 9 Any desired inner lining

Construction values	U value with 10 % rafter proportion [W/m²K]					Phase shift [h]					Amplitude absorption [1/TAV]				
	Rock wool WLG 040 insulation between rafters in mm														
	100	120	140	160	180	100	120	140	160	180	100	120	140	160	180
On-roof insulation															
TOP 160 100 mm	0.206	x	x	x	x	11.2	x	x	x	x	10.4	x	x	x	x
TOP 160 120 mm	0.188	0.174	x	x	x	12.5	12.8	x	x	x	14.5	16.5	x	x	x
TOP 140 100 mm	0.204	x	x	x	x	10.8	x	x	x	x	9.7	x	x	x	x
TOP 140 120 mm	0.186	0.172	x	x	x	12.0	12.3	x	x	x	13.3	15.1	x	x	x
TOP 140 140 mm	0.171	0.159	0.149	x	x	13.2	13.7	14.0	x	x	18.3	20.9	23.6	x	x
TOP 140 160 mm	0.158	0.148	0.139	0.132	x	14.5	14.8	15.2	15.5	x	25.3	28.9	32.7	36.8	x
TOP 140 180 mm	0.147	0.138	0.131	0.124	0.118	15.7	16.0	16.3	16.7	17.0	34.8	39.8	45.0	50.8	56.8

x Setup not possible with 1:1 solution as the on-roof insulation is not thick enough

SYSTEM DESCRIPTION<u>1:1 roof renovation solution with pro clima DASAPLANO 0,01 connect</u>

Perform renovation work fast and additionally equip it with a great safety potential with the pro clima DASAPLANO 0,01 connect. It was developed especially for roof renovation work from the outside, is installed on the surface of the rafters and insulated with best wood TOP 140/160, the thickness of which corresponds with the thickness of the rafter insulation between the rafters at least. The space between the rafters must be fully insulated.

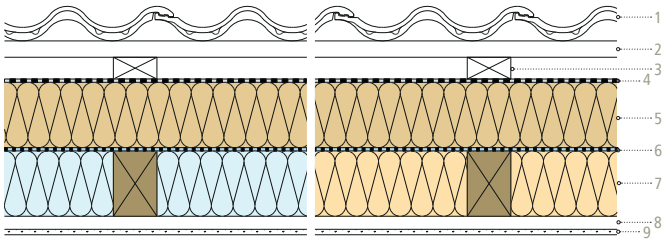
The sheet transfers moisture to the outside via its air-tight, monolithic, moisture-active functional membrane.
This results in optimum protection against structural damage and mold.

NOTE:

In case of roof renovations with on-roof insulations ≥ 80 mm we recommend using the MULTITHERM 140 (tongue + groove connection) with lining membrane instead of the TOP, since large joints may develop due to uneven roof framework and thick on-roof insulations on the upper side of the roof.

Setup 8: 1:1 solution with pro clima and best wood MULTITHERM 140

Additional underlay pro clima SOLITEX MENTO 3000 connect required on best wood MULTITHERM



Roof structure:

1 Roof tiles 2 Wooden lathework 30 mm 3 Counter batten 40 mm
4 pro clima SOLITEX MENTO 3000 connect 5 best wood MULTITHERM 140
6 Airtight sealing sheet pro clima DASAPLANO 0,01 connect 7 Rafters with fibrous rafter insulation e.g. rock wool WLG 040 or best wood FLEX 50
8 Substructure 24 mm 9 Any desired inner lining

Construction values	U value with 10 % rafter proportion [W/m²K]					Phase shift [h]					Amplitude absorption [1/TAV]				
	Rock wool WLG 040 insulation between rafters in mm														
	100	120	140	160	180	100	120	140	160	180	100	120	140	160	180
On-roof insulation															
MULTITHERM 140 100 mm	0.204	x	x	x	x	10.7	x	x	x	x	10.3	x	x	x	x
MULTITHERM 140 120 mm	0.186	0.172	x	x	x	11.8	12.3	x	x	x	14.0	16.0	x	x	x
MULTITHERM 140 140 mm	0.171	0.159	0.149	x	x	13.2	13.5	13.8	x	x	19.4	22.1	25.1	x	x
MULTITHERM 140 160 mm	0.158	0.148	0.139	0.132	x	14.3	14.7	15.0	15.3	x	26.8	30.6	34.6	38.9	x
MULTITHERM 140 180 mm	0.147	0.138	0.131	0.124	0.118	15.5	15.8	16.2	16.5	16.8	36.9	42.2	47.8	53.8	60.2

x Setup not possible with 1:1 solution as the on-roof insulation is not thick enough

SYSTEM DESCRIPTION 1:1 roof renovation solution with pro clima DASAPLANO 0,01 connect

Perform renovation work fast and additionally equip it with a great safety potential with the pro clima DASAPLANO 0,01 connect. It was developed especially for roof renovation work from the outside, is installed on the surface of the rafters and insulated with best wood MULTITHERM 140, the thickness of which corresponds with the thickness of the rafter insulation between the rafters at least. The space between the rafters must be fully insulated. An underlay (s_d value ≤ 0.10 m, e.g. pro clima SOLITEX MENTO 3000 connect) is intended above the on-roof insulation as an additional rainproof measure.

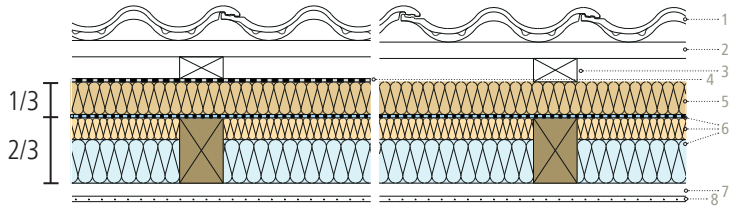
The sheet transfers moisture to the outside via its air-tight, monolithic, moisture-active functional membrane.
This results in optimum protection against structural damage and mold.

NOTE:

In case of roof renovations with on-roof insulations ≥ 80 mm we recommend using the MULTITHERM 140 (tongue + groove connection) with lining membrane instead of the TOP, since large joints may develop due to uneven roof framework and thick on-roof insulations on the upper side of the roof.

Setup 9: 2:1 solution with pro clima and on-roof insulation best wood TOP

at least 40 mm best wood FLEX 50 underneath the pro clima DASAPLANO 0,01 connect



Roof structure:

1 Roof tiles 2 Wooden lathework 30 mm 3 Counter batten 40 mm
4 Possible in addition: pro clima SOLITEX MENTO 3000 connect
5 best wood TOP 220/180/160/140 6 Rafters with at least 40 mm best wood FLEX 50 underneath the pro clima DASAPLANO 0,01 connect, remaining rafter insulation with any fibrous insulation e.g.: rock wool WLG 040
7 Substructure 24 mm 8 Any desired inner lining

Construction values	U value with 10 % rafter proportion [W/m²K]					Phase shift [h]					Amplitude absorption [1/TAV]				
	best wood FLEX 50 + rock wool insulation between rafters in mm														
	100 (40+60)	120 (40+80)	140 (40+100)	160 (40+120)	180 (40+140)	100 (40+60)	120 (40+80)	140 (40+100)	160 (40+120)	180 (40+140)	100 (40+60)	120 (40+80)	140 (40+100)	160 (40+120)	180 (40+140)
On-roof insulation															
TOP 220 50 mm	0.282*	x	x	x	x	8.7	x	x	x	x	5.0	x	x	x	x
TOP 220 60 mm	0.260*	0.236	x	x	x	9.3	9.8	x	x	x	6.0	6.9	x	x	x
TOP 180 50 mm	0.270*	x	x	x	x	8.5	x	x	x	x	5.2	x	x	x	x
TOP 180 60 mm	0.250*	0.230	x	x	x	9.2	9.7	x	x	x	6.1	7.0	x	x	x
TOP 180 80 mm	0.229	0.209	0.192	0.178	x	10.7	11.2	11.5	11.8	x	8.7	9.9	11.2	12.5	x
TOP 180 100 mm	0.207	0.191	0.177	0.165	0.154	12.2	12.5	12.8	13.2	13.5	12.3	14.1	16.0	18.1	20.3
TOP 160 60 mm	0.251*	0.227	x	x	x	9.0	9.3	x	x	x	5.9	6.7	x	x	x
TOP 160 80 mm	0.224	0.205	0.189	0.175	x	10.3	10.8	11.2	11.5	x	8.2	9.4	10.6	11.9	x
TOP 160 100 mm	0.203	0.187	0.173	0.162	0.152	11.8	12.2	12.5	12.8	13.2	11.6	13.2	15.0	17.0	19.0
TOP 140 80 mm	0.222	0.203	0.187	0.174	x	10.0	10.5	10.8	11.2	x	7.9	9.0	10.1	11.4	x
TOP 140 100 mm	0.201	0.185	0.172	0.160	0.150	11.3	11.8	12.2	12.5	12.8	10.9	12.4	14.1	15.8	17.8
TOP 140 120 mm	0.183	0.170	0.159	0.149	0.140	12.7	13.0	13.3	13.8	14.2	15.0	17.2	19.5	22.0	24.7

*Threshold values of EnEV not observed
x Setup not possible with 2:1 solution as the on-roof insulation is not thick enough

SYSTEM DESCRIPTION 2:1 roof renovation solution with pro clima DASAPLANO 0,01 connect

Perform renovation work fast and additionally equip it with a great safety potential with the pro clima DASAPLANO 0,01 connect. It was developed especially for roof renovation work from the outside, is installed on the surface of the rafters and insulated with best wood TOP 140/160/180/220, the thickness of which corresponds with half the thickness of the rafter insulation between the rafters at least. A sorptive fiber insulation material (e.g. best wood FLEX 50) of at least 40 mm in thickness is placed directly underneath the airtight sealing sheet pro clima DASAPLANO 0,01 connect.

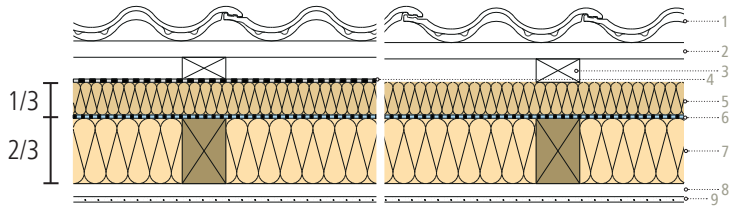
The sheet transfers moisture to the outside via its air-tight, monolithic, moisture-active functional membrane.
This results in optimum protection against structural damage and mold.

NOTE:

In case of roof renovations with on-roof insulations ≥ 80 mm we recommend using the MULTITHERM 140 (tongue + groove connection) with lining membrane instead of the TOP, since large joints may develop due to uneven roof framework and thick on-roof insulations on the upper side of the roof.

Setup 10: 2:1 solution with pro clima and on-roof insulation best wood TOP

Insulation between the rafters entirely with best wood FLEX 50



Roof structure:

1 Roof tiles 2 Wooden lathework 30 mm 3 Counter batten 40 mm
4 Possible in addition: pro clima SOLITEX MENTO 3000 connect
5 best wood TOP 220/180/160/140 6 Airtight sealing sheet pro clima DASAPLANO 0,01 connect 7 Rafters with best wood FLEX 50 8 Substructure 24 mm
9 Any desired inner lining

Construction values	U value with 10 % rafter proportion [W/m²K]					Phase shift [h]					Amplitude absorption [1/TAV]				
	best wood FLEX 50 insulation between rafters in mm														
	100	120	140	160	180	100	120	140	160	180	100	120	140	160	180
On-roof insulation															
TOP 220 50 mm	0.280*	x	x	x	x	9.3	x	x	x	x	6.2	x	x	x	x
TOP 220 60 mm	0.260*	0.235	x	x	x	10.2	11.0	x	x	x	7.4	9.1	x	x	x
TOP 180 50 mm	0.268*	x	x	x	x	9.3	x	x	x	x	6.4	x	x	x	x
TOP 180 60 mm	0.250*	0.229	x	x	x	10.0	10.8	x	x	x	7.6	9.3	x	x	x
TOP 180 80 mm	0.227	0.207	0.190	0.176	x	11.5	12.2	13.0	13.7	x	10.6	13.0	15.9	19.4	x
TOP 180 100 mm	0.206	0.190	0.175	0.163	0.153	12.8	13.7	14.3	15.2	15.8	15.2	18.6	22.8	27.9	34.1
TOP 160 60 mm	0.249*	0.225	x	x	x	9.7	10.5	x	x	x	7.2	8.8	x	x	x
TOP 160 80 mm	0.223	0.204	0.187	0.174	x	11.2	12.0	12.7	13.5	x	10.3	12.5	15.3	18.7	x
TOP 160 100 mm	0.202	0.186	0.172	0.160	0.150	12.5	13.3	14.0	14.8	15.5	14.3	17.6	21.5	26.3	32.2
TOP 140 80 mm	0.221	0.202	0.186	0.172	x	10.8	11.5	12.2	13.0	x	9.6	11.7	14.4	17.9	x
TOP 140 100 mm	0.200	0.184	0.171	0.159	0.149	12.2	13.0	13.7	14.5	15.2	13.4	16.5	20.2	24.7	30.2
TOP 140 120 mm	0.182	0.169	0.158	0.148	0.139	13.3	14.2	14.8	15.7	16.3	18.6	22.8	28.0	34.2	41.8

*Threshold values of EnEV not observed
x Setup not possible with 2:1 solution as the on-roof insulation is not thick enough. Execution with sub and top solution. Setup 13, page 38 is possible.

SYSTEM DESCRIPTION 2:1 roof renovation solution with pro clima DASAPLANO 0,01 connect

Perform renovation work fast and additionally equip it with a great safety potential with the pro clima DASAPLANO 0,01 connect. It was developed especially for roof renovation work from the outside, is installed on the surface of the rafters and insulated with best wood TOP 140/160/180/220, the thickness of which corresponds with half the thickness of the rafter insulation between the rafters at least. Best wood FLEX 50 completely insulates the space between the rafters directly underneath the airtight sealing sheet pro clima DASAPLANO 0,01 connect.

The sheet transfers moisture to the outside via its air-tight, monolithic, moisture-active functional membrane.
This results in optimum protection against structural damage and mold.

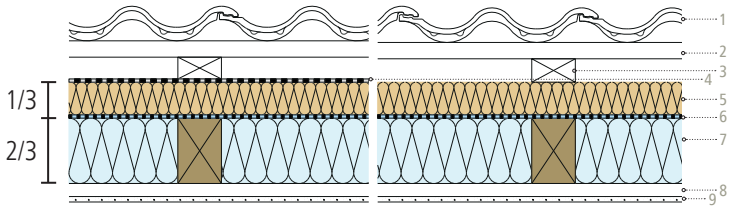
NOTE:

In case of roof renovations with on-roof insulations ≥ 80 mm we recommend using the MULTITHERM 140 (tongue + groove connection) with lining membrane instead of the TOP, since large joints may develop due to uneven roof framework and thick on-roof insulations on the upper side of the roof.

Prerequisite for this 2:1 solution is a full-surfaced covering with plastered building boards or plastered wood-wool slabs on the inside of the roof construction.

Setup 11: 2:1 solution from pro clima with on-roof insulation best wood TOP

Insulating between the rafters filled entirely with any fibrous insulation, e.g. best wood FLEX 50 or rock wool WLG 035



Roof structure:

1 Roof tiles 2 Wooden lathework 30 mm 3 Counter batten 40 mm 4 Possible in addition: pro clima SOLITEX MENTO 3000 connect 5 best wood TOP 220/180/160/140 6 Airtight sealing sheet pro clima DASAPLANO 0,01 connect; optionally possible: Soft wood casing (Fi, Ki, Ta) ≤ 30mm, no derived timber boards 7 Rafters with any fibrous insulation e.g. best wood FLEX 50 or rock wool WLG 035 8 Substructure 24 mm 9 Staff board or wood-wool board, plastered

Construction values	U value with 10 % rafter proportion [W/m²K]					Phase shift [h]					Amplitude absorption [1/TAV]				
	Rock wool WLG 035 insulation between rafters in mm														
	100	120	140	160	180	100	120	140	160	180	100	120	140	160	180
On-roof insulation															
TOP 220 50 mm	0.260*	x	x	x	x	8.0	x	x	x	x	4.8	x	x	x	x
TOP 220 60 mm	0.248*	0.223	x	x	x	8.8	9.2	x	x	x	5.7	6.5	x	x	x
TOP 180 50 mm	0.260*	x	x	x	x	7.8	x	x	x	x	4.9	x	x	x	x
TOP 180 60 mm	0.241*	0.217	x	x	x	8.5	8.8	x	x	x	5.7	6.5	x	x	x
TOP 180 80 mm	0.217	0.198	0.181	0.167	x	10.2	10.3	10.7	11.0	x	8.0	9.1	10.3	11.6	x
TOP 180 100 mm	0.198	0.181	0.168	0.156	0.145	11.5	11.8	12.0	12.3	12.7	11.5	13.1	14.9	16.7	18.7
TOP 160 60 mm	0.236	0.213	x	x	x	8.5	8.8	x	x	x	6.7	7.7	x	x	x
TOP 160 80 mm	0.213	0.194	0.178	0.165	x	9.8	10.2	10.3	10.7	x	7.7	8.7	9.8	11.0	x
TOP 160 100 mm	0.194	0.178	0.165	0.153	0.143	11.2	11.5	11.7	12.0	12.3	10.8	12.3	13.8	15.5	17.2
TOP 140 80 mm	0.211	0.192	0.176	0.163	x	9.7	10.0	10.2	10.5	x	8.8	10.0	11.3	12.6	x
TOP 140 100 mm	0.192	0.176	0.163	0.152	0.142	10.8	11.0	11.3	11.7	11.8	10.0	11.4	12.8	14.3	15.9
TOP 140 120 mm	0.176	0.162	0.151	0.141	0.133	12.0	12.3	12.5	12.8	13.2	13.9	15.8	18.0	20.2	22.7

*Threshold values of EnEV not observed
x Setup not possible with 2:1 solution as the on-roof insulation is not thick enough. Execution with sub and top solution. Setup 13, page 38 is possible.

SYSTEM DESCRIPTION 2:1 roof renovation solution with pro clima DASAPLANO 0,01 connect

Perform renovation work fast and additionally equip it with a great safety potential with the pro clima DASAPLANO 0,01connect. It was developed especially for roof renovation work from the outside, is installed on the surface of the rafters and insulated with best wood TOP 140/160/180/220, the thickness of which corresponds with half the thickness of the rafter insulation between the rafters at least. Any fibrous insulation, e.g. best wood FLEX 50 or rock wool WLG 035 completely insulates the space between the rafters directly underneath the airtight sealing sheet pro clima DASAPLANO 0,01 connect. There must be a full-surfaced paneling of plasterboards or plastered derived wood boards on the inside of the roof construction.

The sheet transfers moisture to the outside via its air-tight, monolithic, moisture-active functional membrane.
This results in optimum protection against structural damage and mold.

NOTE:

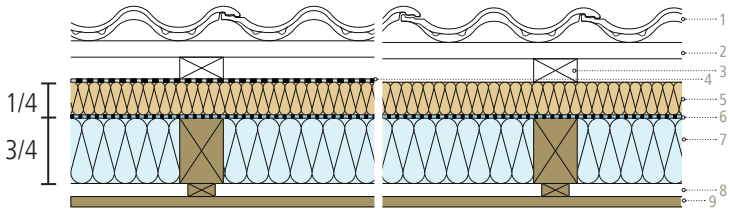
In case of roof renovations with on-roof insulations ≥ 80 mm we recommend using the MULTITHERM 140 (tongue + groove connection) with lining membrane instead of the TOP, since large joints may develop due to uneven roof framework and thick on-roof insulations on the upper side of the roof.

Prerequisite for this 3:1 solution is a full-surfaced covering with profile boards or plaster on batten formwork on the inside of the roof construction.

Setup 12: 3:1 solution from pro clima with on-roof insulation best wood TOP

Insulating between the rafters filled entirely with any fibrous insulation, e.g. best wood FLEX 50 or rock wool WLG 035

Prerequisite for this construction is a full-surfaced covering with profile boards or plaster on batten formwork on the inside of the roof construction



Roof structure:

1 Roof tiles 2 Wooden lathework 30 mm 3 Counter batten 40 mm 4 Possible in addition: pro clima SOLITEX MENTO 3000 connect 5 best wood TOP 220/180/160/140 6 Airtight sealing sheet pro clima DASAPLANO 0,01 connect; optionally possible: Soft wood casing (Fi, Ki, Ta) ≤ 30mm, no derived timber boards 7 Rafters with any fibrous insulation e.g., FLEX 50 or rock wool WLG 035 8 Substructure 24 mm 9 Paneling or plaster on batten formwork

Construction values	U value with 10 % rafter proportion [W/m²K]					Phase shift [h]					Amplitude absorption [1/TAV]				
	Rock wool WLG 035 insulation between rafters in mm														
	120	140	160	180	200	120	140	160	180	200	120	140	160	180	200
On-roof insulation															
TOP 220 40 mm	0.242*	x	x	x	x	7.2	x	x	x	x	3.8	x	x	x	x
TOP 220 50 mm	0.230	0.208	x	x	x	8.0	8.3	x	x	x	4.3	4.9	x	x	x
TOP 220 60 mm	0.219	0.199	0.183	0.169	x	8.8	9.2	9.5	9.7	x	5.1	5.7	6.4	7.1	x
TOP 180 50 mm	0.225	0.204	x	x	x	7.8	8.2	x	x	x	4.4	4.9	x	x	x
TOP 180 60 mm	0.214	0.195	0.179	0.166	x	8.7	9.0	9.3	9.5	x	5.1	5.7	6.4	7.1	x
TOP 180 80 mm	0.195	0.179	0.166	0.154	0.144	10.2	10.5	10.8	11.0	11.3	7.2	8.1	9.0	10.0	11.0
TOP 180 100 mm	0.179	0.166	0.154	0.144	0.135	11.5	11.8	12.2	12.5	12.7	10.4	11.6	13.1	14.6	16.2
TOP 160 60 mm	0.210	0.191	0.176	0.163	x	8.5	8.8	9.0	9.3	x	4.9	5.5	6.2	6.9	x
TOP 160 80 mm	0.192	0.176	0.163	0.152	0.142	9.8	10.2	10.5	10.8	11.0	6.8	7.7	8.6	9.5	10.5
TOP 160 100 mm	0.176	0.163	0.152	0.142	0.133	11.2	11.5	11.8	12.2	12.3	9.7	10.9	12.1	13.5	15.0
TOP 140 80 mm	0.189	0.174	0.161	0.150	0.141	9.5	9.8	10.2	10.5	10.7	6.5	7.3	8.1	9.0	9.9
TOP 140 100 mm	0.174	0.161	0.150	0.141	0.132	10.8	11.2	11.5	11.8	12.0	9.0	10.1	11.2	12.5	13.8
TOP 140 120 mm	0.161	0.150	0.140	0.132	0.124	12.2	12.3	12.7	13.0	13.3	12.5	14.1	15.8	17.7	19.8

*Threshold values of EnEV not observed

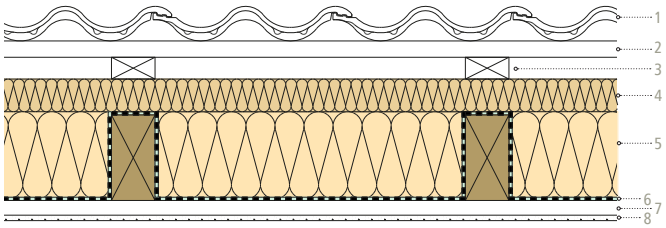
SYSTEM DESCRIPTION 3:1 roof renovation solution with pro clima DASAPLANO 0,01 connect

Perform renovation work fast and additionally equip it with a great safety potential with the pro clima DASAPLANO 0,01 connect. It was developed especially for roof renovation work from the outside, is installed on the surface of the rafters and insulated with best wood TOP 140/160/180/220, the thickness of which corresponds with a third of the thickness of the rafter insulation between the rafters at least. Any fibrous insulation, e.g. best wood FLEX 50 or rock wool WLG 035 completely insulates the space between the rafters directly underneath the airtight sealing sheet pro clima DASAPLANO 0,01 connect. There must be a full-surfaced paneling of molded boards or plaster on batten formwork on the inside of the roof construction.

NOTE:

In case of roof renovations with on-roof insulations ≥ 80 mm we recommend using the MULTITHERM 140 (tongue + groove connection) with lining membrane instead of the TOP, since large joints may develop due to uneven roof framework and thick on-roof insulations on the upper side of the roof.

Setup 13: Sub and top solution with pro clima and on-roof insulation best wood TOP



Roof structure:

1 Roof tiles 2 Wooden lathework 30 mm 3 Counter batten 40 mm 4 best wood TOP 220/180/160/140 5 Rafters with best wood FLEX 50 6 pro clima DASATOP 7 Substructure 24 mm 8 Any desired inner lining

Construction values	U value with 10 % rafter proportion [W/m²K]					Phase shift [h]					Amplitude absorption [1/TAV]				
	best wood FLEX 50 insulation between rafters in mm														
	100	120	140	160	180	100	120	140	160	180	100	120	140	160	180
On-roof insulation															
TOP 220 40 mm	0.290*	0.260*	0.236	0.215	0.197	8.7	9.3	10.0	10.8	11.5	5.3	6.6	8.0	9.8	11.8
TOP 220 50 mm	0.280*	0.248*	0.225	0.205	0.189	9.3	10.2	10.8	11.7	12.3	6.2	7.7	9.4	11.3	13.7
TOP 180 35 mm	0.300*	0.260*	0.238	0.216	0.199	8.2	8.8	9.7	10.3	11.2	5.1	6.3	7.7	9.4	11.5
TOP 180 50 mm	0.270*	0.242	0.220	0.201	0.186	9.3	10.0	10.7	11.5	12.2	6.4	7.8	9.6	11.6	14.1
TOP 180 60 mm	0.250*	0.230	0.209	0.192	0.178	10.0	10.7	11.5	12.2	13.0	7.5	9.3	11.2	13.6	16.6
TOP 180 80 mm	0.228	0.208	0.191	0.177	0.165	11.5	12.2	13.0	13.7	14.5	10.6	12.9	15.8	19.3	23.6
TOP 180 100 mm	0.207	0.190	0.176	0.164	0.153	12.8	13.7	14.3	15.2	15.8	15.1	18.5	22.7	27.8	33.9
TOP 160 60 mm	0.249	0.225	0.206	0.189	0.175	9.7	10.5	11.2	11.8	12.7	7.2	8.8	10.7	13.0	16.0
TOP 160 80 mm	0.224	0.204	0.188	0.174	0.163	11.2	12.0	12.7	13.5	14.2	10.2	12.4	15.2	18.6	22.7
TOP 160 100 mm	0.203	0.186	0.173	0.161	0.151	12.5	13.3	14.0	14.8	15.5	14.2	17.5	21.4	26.2	31.9
TOP 140 80 mm	0.221	0.202	0.186	0.172	0.161	10.8	11.5	12.2	13.0	13.7	9.6	11.7	14.3	17.8	22.4
TOP 140 100 mm	0.200	0.185	0.171	0.160	0.150	12.2	12.8	13.7	14.3	15.2	13.4	16.4	20.1	24.6	30.0
TOP 140 120 mm	0.183	0.170	0.158	0.148	0.140	13.3	14.2	14.8	15.7	16.3	18.5	22.7	27.9	34.0	41.5

*Threshold values of EnEV not observed | Execution also possible with 2:1 solution, setup 10, page 35.

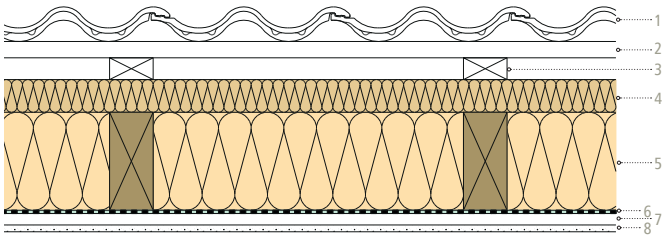
SYSTEM DESCRIPTION Sub and top roof renovation solution with pro clima DASATOP

The moisture barrier and air-tightness system pro clima DASATOP was especially developed for the fast and simple sub and top roof renovation from the outside. The sheet is optimized for installation in the rafters and is looped over the rafters. It is recommended to secure the DASATOP on the sides of the rafters with approx. 3 cm thick strips of plywood or wood fiver in the bottom corners of the rafters.

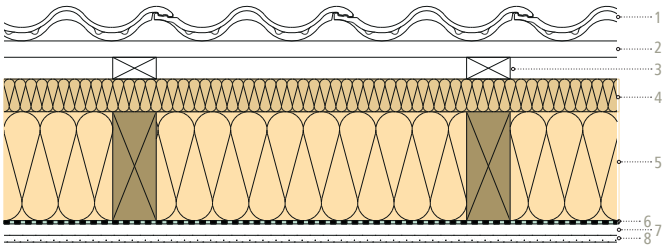
NOTE:

In case of roof renovations with on-roof insulations ≥ 80 mm we recommend using the MULTITHERM 140 (tongue + groove connection) with lining membrane instead of the TOP, since large joints may develop due to uneven roof framework and thick on-roof insulations on the upper side of the roof.

Soundproofing insulation between rafters

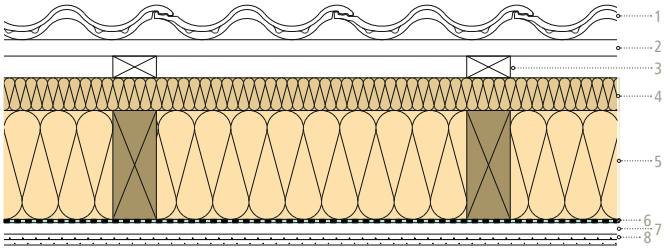
	R_w (C; C_{tr})
	**50**[1)] (-3; -9)

Roof structure:
1 Roof covering with concrete roofing tiles
2 Battens
3 Counter batten with underhead thread screw
4 ≥ 22 mm best wood TOP 140/160/180/220
5 120–180 mm best wood FLEX 50
6 Vapor barrier
7 Substructure 24 mm
8 Gypsum board GK 12.5 mm



Roof structure:
1 Roof covering with concrete roofing tiles
2 Battens
3 Counter batten with underhead thread screw
4 ≥ 22 mm best wood TOP 140/160/180/220
5 ≥ 180 mm best wood FLEX 50
6 Vapor barrier
7 Substructure 24 mm
8 Gypsum board GK 12.5 mm

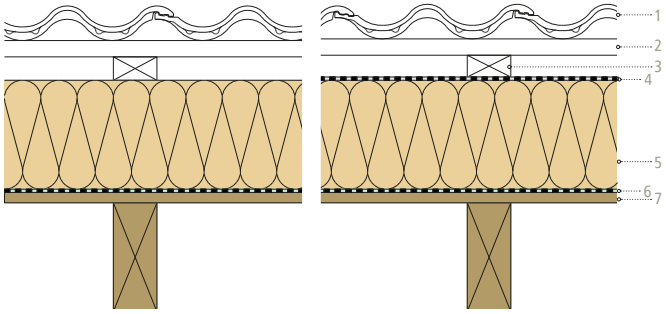
52[1)] (-3; -10)



Roof structure:
1 Roof covering with concrete roofing tiles
2 Battens
3 Counter batten with underhead thread screw
4 ≥ 22 mm best wood TOP 140/160/180/220
5 ≥ 200 mm best wood FLEX 50
6 Vapor barrier
7 Substructure 24 mm
8 Fiber-reinforced plasterboard GF (2x) 10 mm

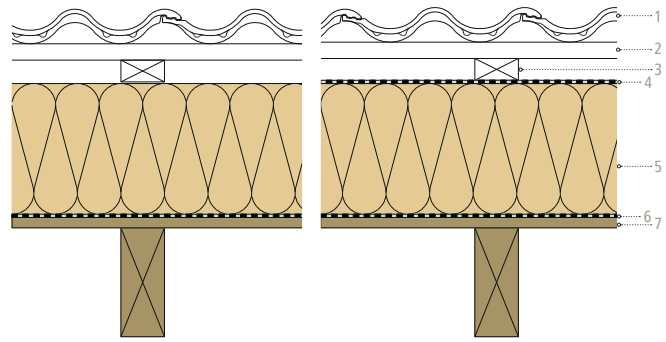
57[1)] (-4; -11)

Soundproofing on-roof insulation



Roof structure:
1 Roof covering with concrete roofing tiles
2 Battens
3 Counter batten with underhead thread screw
4 Possibly underlay
5 ≥ 140 mm best wood MULTITHERM 110,140
best wood TOP 140/160/180
6 Vapor barrier
7 ≥ 19 mm tongue and groove formwork

48[1)] (-3; -9)



Roof structure:
1 Roof covering with concrete roofing tiles
2 Battens
3 Counter batten with underhead thread screw
4 Possibly underlay
5 ≥ 240 mm best wood MULTITHERM 110,140
best wood TOP 140
6 Vapor barrier
7 ≥ 19 mm tongue and groove formwork

52[1)] (-2; -7)

[1)] General information: Based on DIN 4109-33, tab. 11/12. The axis spacing of the rafters must be ≥ 600 mm.

Roof covering:	Addition/deduction	**Installation:**	Addition/deduction
Clay roof tiles (single tile formation)	-2 dB	with under head thread screws (e.g. HECO TOPIX®-Therm)	0 dB
Plain tiles (double or crown tile formation)	+2 dB	with countersunk or flat head screws	-9 dB

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