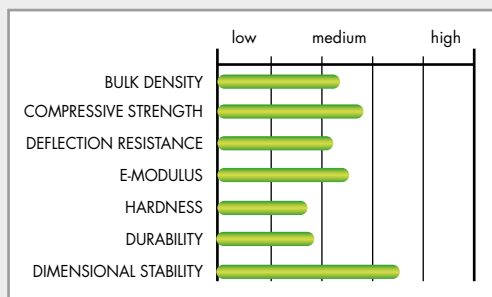


FASTENING RECOMMENDATION

DOUGLASIE (PSEUDOTSUGA MENZIESII)



ADVANTAGES

- + Low swelling and shrinkage
- + Good dimensional stability
- + Approved structural timber
- + Substitute for tropical timber
- + Largely sourced from sustainable forestry

DISADVANTAGES

- Resin bleed possible
- Moderate durability but sufficient for deck construction
- Moderate hardness

GENERAL DETAILS

- **Origin:** North America, also cultivated in Europe since the 19th century
- **Colour:** Light yellowish brown to red brown, resembles European Larch.
- **Durability class:** 3 – 4
- **Properties:** High elasticity, low swelling and shrinkage, good dimensional stability, low resin content, fine texture.

APPLICATION

Deck construction, façades, solid-wood floorboards, window frames, fencing, approved structural timber, sometimes used as a substitute for tropical timber.



INSTALLATION INSTRUCTIONS

- Centre distance in substructure: max. 60 cm
- Joint width between the boards: 6 bis 8 mm
- Spacing between the butt joints: 3 bis 4 mm



FASTENING OPTIONS

VISIBLE



Dista-strip 2.0



Terrasotec



Hapotec



Profile drilling screw

HIDDEN

Twin System Clip



Deck glider



StarterClip



T-Stick



Decking multi angle



Snap-in fastener

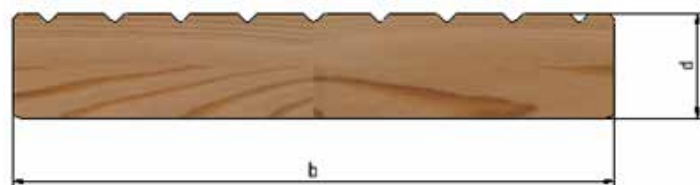


FASTENING RECOMMENDATION

DOUGLAS FIR

BOARD CROSS SECTION

To guarantee a long service life for boards, a minimum board thickness should be chosen according to the centre distance for the substructure and the required board width. The following table shows the relevant recommendation for your board and the associated centre distance for the substructure.

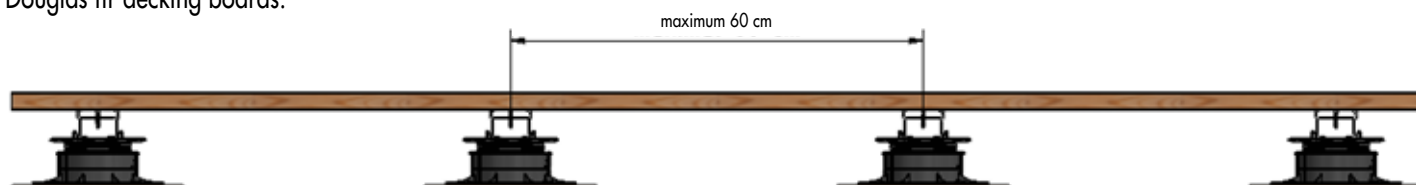


	Spacing for the substructure [cm]	
	50	60
Board width b [mm]	Minimum board thickness d [mm]	
100	30	32
120	27	30
140	25	27
160	23	26

MAXIMUM SPACING FOR THE SUBSTRUCTURE

The correct spacing of the substructure is important to ensure the plank load-bearing capacity.

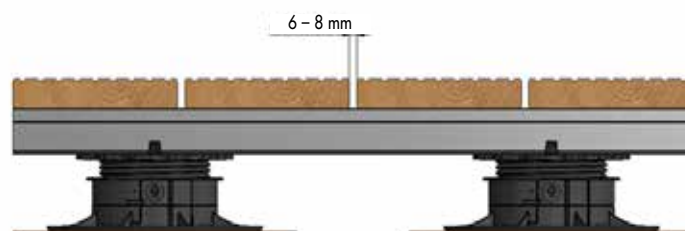
Our recommendation here is a **maximum distance of 60 cm** for Douglas fir decking boards.



JOINT WIDTHS

Given that wood swells and shrinks most in the width of the board, correct joint width is key to the life of a terrace.

For a terrace with Douglas fir planks, we recommend a joint width of **6 to 8 mm**.



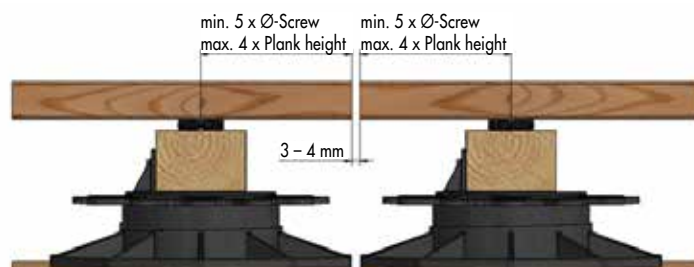
FASTENING RECOMMENDATION

DOUGLAS FIR

BOARD JOINTS

Not only is it necessary to incorporate board joints in the planning of a substructure, but also to implement them correctly so that the timber can swell and shrink, thereby retaining the visual appearance of the terrace while preventing damage.

For Douglas fir, we recommend a distance for the plank joints of **3 – 4 mm** not to be under or exceeded.



PRE-DRILLING

When building a terrace with wooden planks made of Douglas fir, pre-drilling and countersinking is absolutely recommended. These tend to crack easily and there is a risk of splitting, which is prevented by pre-drilling. The additional countersinking significantly minimises the possibility of chip build-up around the screw head and ensures a more attractive screw pattern.



Art. no.	Name	PU
945986	Drill-Stop	1

POSSIBLE FASTENINGS FOR YOUR BOARDS

Decking boards made of Douglas fir are not suitable for indirect fastening due to their high swelling and shrinkage behaviour. Therefore, we only recommend products for visible screw connection.

VISIBLE FASTENING

DOUGLAS FIR

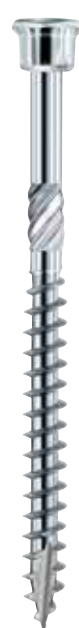
SCREWS FOR DIRECT/VISIBLE FASTENING

TERRASOTEC, HARDENED STAINLESS STEEL

The Terrasotec screw is designed to fasten wooden boards to a substructure of wood; it is not suitable for fastening boards to an aluminium substructure.

Art. no.	Dimensions [mm]	Drive	PU
905527	5,0 x 45	TX25	200
905523	5,0 x 50	TX25	200
905524	5,0 x 60	TX25	200
905525	5,0 x 70	TX25	200
905526	5,0 x 80	TX25	200
905544	5,0 x 90	TX25	200
905543	5,0 x 100	TX25	200
905523-BUCKET	5,0 x 50	TX25	500*
905524-BUCKET	5,0 x 60	TX25	500*
905525-BUCKET	5,0 x 70	TX25	500*
905526-BUCKET	5,0 x 80	TX25	500*

*Incl. Drill-Stop and TX25 Bit



ADVANTAGES / PROPERTIES

- Limited resistance to acid
- 10 years experience without corrosion problems with suitable woods
- Not suitable for woods containing high amounts of tanning agents, such as cumaru, oak, merbau, robinia, etc.
- Not suitable for use in chlorous atmospheres
- Stainless steel in accordance with DIN 10088
- 50% greater breaking torque than A2 and A4
- Magnetizable



ON REQUEST, SCREW HEADS CAN BE PAINTED IN RAL COLOURS.

NOTE

Hardened stainless steel is perfectly adequate for Douglas fir decking, but this does not take into account the environment in which the deck is built. For atmospheres containing salt or chlorine, the Terrasotec in A2 or even A4 stainless steel should be used as an alternative.

APPLICATION IMAGE



The Terrasotec made of hardened stainless steel is screwed into the terrace decking made of Douglas fir wood.

VISIBLE FASTENING

HAPATEC, HARDENED STAINLESS STEEL

The Hapatec screw is designed to fasten wooden boards to a substructure of wood; it is not suitable for fastening boards to an aluminium substructure.

Art. no.	Dimensions [mm]	Drive	PU
100048	5,0 x 40	TX25	200
100049	5,0 x 45	TX25	200
111817	5,0 x 50	TX25	200
111818	5,0 x 60	TX25	200
111819	5,0 x 70	TX25	200
111820	5,0 x 80	TX25	200
111888	5,0 x 90	TX25	200
111889	5,0 x 100	TX25	200
100048-BUCKET	5,0 x 40	TX25	500
111817-BUCKET	5,0 x 50	TX25	500
111818-BUCKET	5,0 x 60	TX25	500
111819-BUCKET	5,0 x 70	TX25	500
111820-BUCKET	5,0 x 80	TX25	500

*Incl. Drill-Stop and TX25 Bit

NOTE

Hardened stainless steel is perfectly adequate for Douglas fir decking, but this does not take into account the environment in which the deck is built. For atmospheres containing salt or chlorine, the Hapatec Heli made of A2 or even A4 stainless steel should be used as an alternative.

DOUGLAS FIR



ADVANTAGES / PROPERTIES

- Limited resistance to acid
- 10 years experience without corrosion problems with suitable woods
- Not suitable for woods containing high amounts of tanning agents, such as cumaru, oak, merbau, robinia, etc.
- Not suitable for use in chlorous atmospheres
- Stainless steel in accordance with DIN 10088
- 50% greater breaking torque than A2 and A4
- Magnetizable



ON REQUEST, SCREW HEADS CAN BE PAINTED IN RAL COLOURS.

APPLICATION IMAGE



The Hapatec made of hardened stainless steel is screwed into the terrace decking made of Douglas fir wood.

VISIBLE FASTENING

DOUGLAS FIR

PROFILE DRILLING SCREW, HARDENED STAINLESS STEEL

The profile drilling screw is designed to fasten wooden boards to a substructure of aluminium profiles; it is not suitable for fastening boards to a wood substructure.

Art. no.	Dimensions [mm]	Drive	Board thickness [mm]	PU
905553	5,5 x 41	TX25	16 – 20	200
905559	5,5 x 46	TX25	21 – 25	200
905562	5,5 x 51	TX25	26 – 30	200
975797	5,5 x 56	TX25	31 – 35	200
905560	5,5 x 61	TX25	36 – 40	200



ADVANTAGES / PROPERTIES

- Limited resistance to acid
- 10 years experience without corrosion problems with suitable woods
- Not suitable for woods containing high amounts of tanning agents, such as cumaru, oak, merbau, robinia, etc.
- Not suitable for use in chlorous atmospheres
- Stainless steel in accordance with DIN 10088

NOTE

Hardened stainless steel is perfectly adequate for Douglas fir decking, but this does not take into account the environment in which the deck is built. For atmospheres containing salt or chlorine, the A2 or even A4 stainless steel profile drilling screw should be used as an alternative.

APPLICATION IMAGE



The profile drilling screw made of hardened stainless steel is screwed into the terrace decking made of Douglas fir wood.

VISIBLE FASTENING

DOUGLAS FIR

ACCESSORIES FOR DIRECT/VISIBLE FASTENING

DISTA-LEISTE 2.0

For a visible fastening of boards, two screws must be used for board widths of 140 mm or more in the case of UK wood and UK aluminium profiles. The problem with this is that the screws work against each other when the wood expands or contracts, and this can quickly result in shearing of the screws.



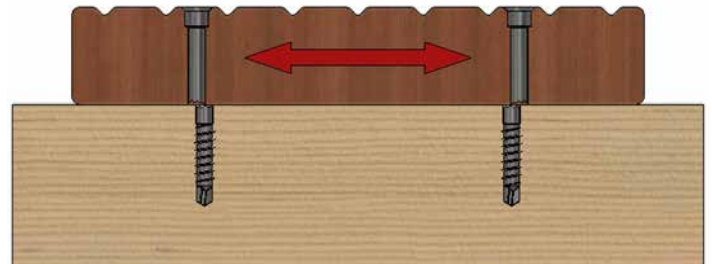
Art. no.	Dimensions [mm] ^{a)}	Material	PU*
944803	30 x 700 x 7	Hard plastic	50

^{a)}width x length x height

*Screws are not included.
Fastening with Terrasotec screws Ø 4 mm.

SHEARING

For this reason, Dista strips 2.0 should always be used for wood substructures or aluminium profiles with no screw channels in order to give screws enough clearance and minimise the risk of shearing.



TERRASOTEC

Suitable for distance strip 2.0.

Art. no.	Dimensions [mm]	Drive	PU
905535	4,0 x 40	TX15●	500



ADVANTAGES / PROPERTIES

- Limited resistance to acid
- 10 years experience without corrosion problems with suitable woods
- Not suitable for woods containing high amounts of tanning agents, such as cumarú, oak, merbau, robinia, etc.
- Not suitable for use in chlorous atmospheres
- Stainless steel in accordance with DIN 10088
- 50% greater breaking torque than A2 and A4
- Magnetizable

VISIBLE FASTENING

DETERMINE THE NECESSARY SCREW LENGTH

To determine the correct screw length for your particular terrace structure, a guide based on the professional rules of the carpentry trade is shown below.

TERRACES WITH WOOD SUBSTRUCTURE AND DISTA STRIP 2.0

To fasten terrace boards to a substructure, it is essential to select the correct screw length; failure to do so can impair the stability and service life of the terrace. Generally, the length of the screw must be at least double the thickness of the fixture (in this case, the thickness of the terrace boards). The screwed-in thread length must also be at least four times the nominal screw diameter; in the case of coniferous timber like Douglas fir, however, we recommend a minimum screw depth of six times the nominal diameter.

THE TOTAL LENGTH OF THE SCREW IS THEREFORE GUIDED BY THE FOLLOWING CRITERIA

DOUGLAS FIR

GENERAL

Only screws with a nominal diameter of 5 mm or more are to be used for the fastening. In outdoor areas, moreover, hardened stainless steel is the minimum requirement for the screw steel (even A2 or A4 stainless steel may be required, depending on the environment in which the terrace will be built).

Total length of screw

→ At least 2 x board thickness plus height of the Dista strip 2.0

Thread length in substructure

→ At least 6 x nominal screw diameter

Example calculation

Board thickness (T): 24 mm, nominal screw diameter (d): 5 mm

Height of Dista strip (D): 7 mm

$$(2 \times 24 \text{ mm}) + 7 \text{ mm} = 55 \text{ mm}$$

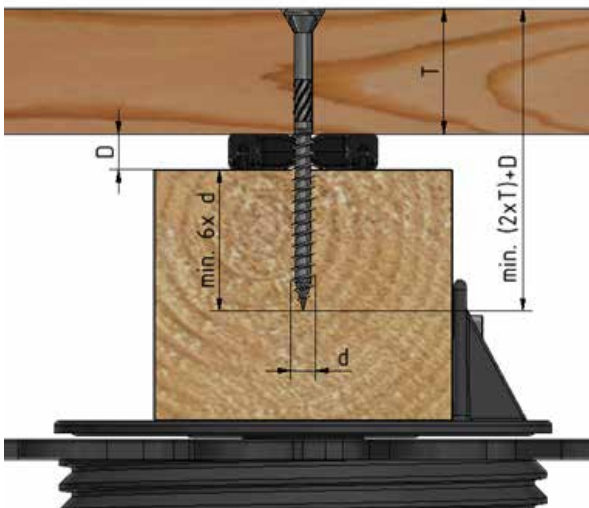
$$6 \times \varnothing 5 \text{ mm} = 30 \text{ mm}$$

$$24 \text{ mm} + 7 \text{ mm} + 30 \text{ mm} = 61 \text{ mm}$$

$$61 \text{ mm} > 55 \text{ mm}$$

Minimum length of screw: 61 mm

→ Screw length to choose: **70 mm**



VISIBLE FASTENING

DOUGLAS FIR

TERRACES WITH WOOD SUBSTRUCTURE AND DISTA STRIP 2.0

At this point it must be stressed that Eurotec does not recommend a terrace construction of this kind. This is because direct contact between the wood substructure and the boards creates a very large area in which waterlogging can form. As a result of this, the wood will rot and the service life of the terrace will be shortened significantly.

If you wish to go ahead with such a structure anyway, however, the requisite screw length is calculated as follows:

Total length of screw

→ At least 2 x board thickness

Thread length in substructure

→ At least 4 x nominal screw diameter

Beispielrechnung

Board thickness (T): 24 mm, nominal screw diameter (d): 5 mm

$(2 \times 24 \text{ mm}) = 48 \text{ mm}$

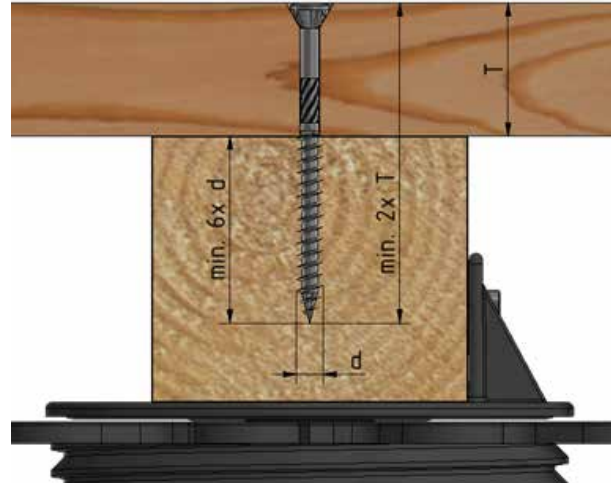
$6 \times \varnothing 5 \text{ mm} = 30 \text{ mm}$

$24 \text{ mm} + 30 \text{ mm} = 54 \text{ mm}$

$48 \text{ mm} < 54 \text{ mm}$

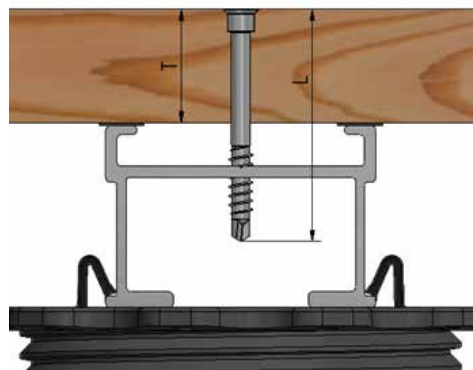
Minimum length of screw: 54 mm

→ **Minimum screw length to choose: 60 mm**



TERRACES WITH ALUMINIUM SUBSTRUCTURE

Our profile drilling screw has been specially designed to fasten terrace boards on our aluminium system profiles. As a result, the screw length for this product is directly assigned to board thickness.



Profile drilling screw	
L [mm]	T [mm]
41	16 – 20
46	21 – 25
51	26 – 30
56	30 – 36
61	36 – 40

VISIBLE FASTENING

DOUGLAS FIR

THREAD LENGTH OF SCREWS

Terrasotec	
L [mm]	Lg [mm]
45	26
50	30
60	35
70	40
80	50
90	55
100	60

Hapotec	
L [mm]	Lg [mm]
45	26
45	28
50	30
60	36
70	42
80	48
90	54
100	60

Profile drilling screw	
L [mm]	Lg [mm]
41	21
46	21
51	21
56	21
61	21

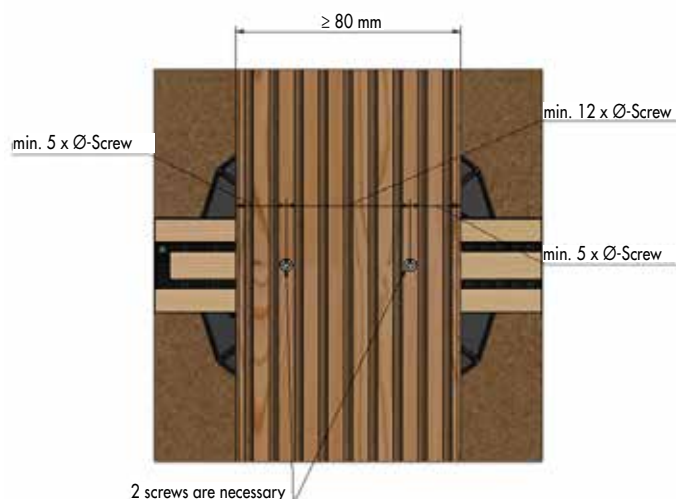
L = nominal length of screw

Lg = thread length of screw

NUMBER OF SCREWS AND POSITION ACCORDING TO BOARD THICKNESS

For boards with a thickness of less than 80 mm, one screw per strand of the substructure is sufficient for fastening. Two screws must be used where the thickness is 80 mm or more.

The positions of the screws are determined by Eurocode 5 to ensure the longest possible service life of the connection elements used and the components affixed. For this reason we recommend a minimum spacing of 12 x the nominal diameter of the screw between screws and a spacing of 5 x the nominal diameter of the screw to the edge. (See illustration)



NOTES

To establish a crossed connection between the board and the substructure, it makes sense to use a minimum board width of 110 mm; otherwise the axis and edge distances may not be maintained.

HIDDEN FASTENING

DOUGLAS FIR

PRODUCTS FOR CONCEALED FASTENING OF TERRACE BOARDS

TWIN SYSTEM CLIP

The Twin system clip can be used in combination with the EVO and EVO Slim aluminium profiles, as well as the HKP terrace support system.

Art. no.	Dimensions [mm] ^{a)}	Material	PU*
945959	26 x 55 x 15	Plastic, black	200
Clamping plate	2 x 30 x 20,5	A2 stainless steel, black	

^{a)}Height x length x width

*Comes supplied with screw Ø 5 x 50 mm and bit



ADVANTAGES

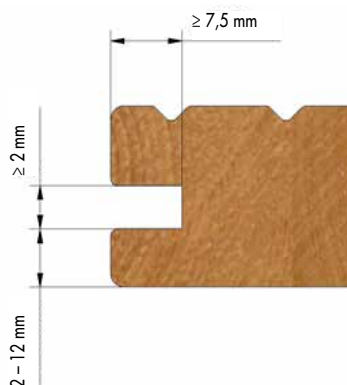
- Individual boards can be adjusted and replaced at any time
- Uniform joint spacing
- Supports constructive timber protection
- Weather-resistant

REQUIRED GROOVE GEOMETRY

Dimensions vary greatly according to supplier.

If you are unsure whether the product is suitable for your project, consult your timber dealer first and ask for the exact dimensions of the side grooves.

If you have any questions about the product, we will of course be pleased to assist.



APPLICATION IMAGE



NOTE

If the Twin system clip is intended to be used in combination with the **Aluminium System Profile EVO Slim**, a shorter screw needs to be ordered separately.

When the supplied screw Ø 5 x 50 mm is used there is the risk, that components below the EVO Slim, such as waterproofings, may get damaged.

HIDDEN FASTENING

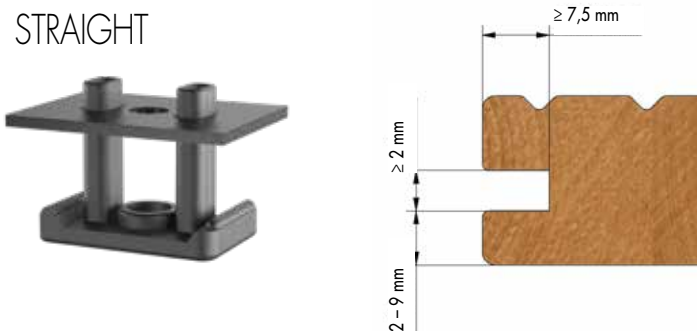
DOUGLAS FIR

PRODUCTS FOR THE HIDDEN FASTENING OF DECKING BOARDS

EVO LIGHT SYSTEM CLIP

The EVO Light system clip can be used in combination with the EVO Light aluminium profile.

STRAIGHT



REQUIRED GROOVE GEOMETRY

Dimensions vary greatly according to supplier.

If you are unsure whether the product is suitable for your project, consult your timber dealer first and ask for the exact dimensions of the side grooves.

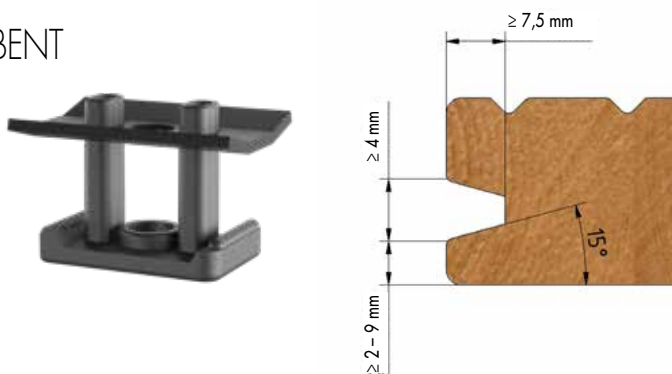
If you have any questions about the product, we will of course be pleased to assist.

Art. no.	Dimensions [mm] ^{a)}	Material	PU*
946029	21 x 24 x 15	Plastic, black	200
Clamping plate	1,5 x 30 x 22	A2 stainless steel	

^{a)}Height x length x width

*Comes supplied with screw

BENT

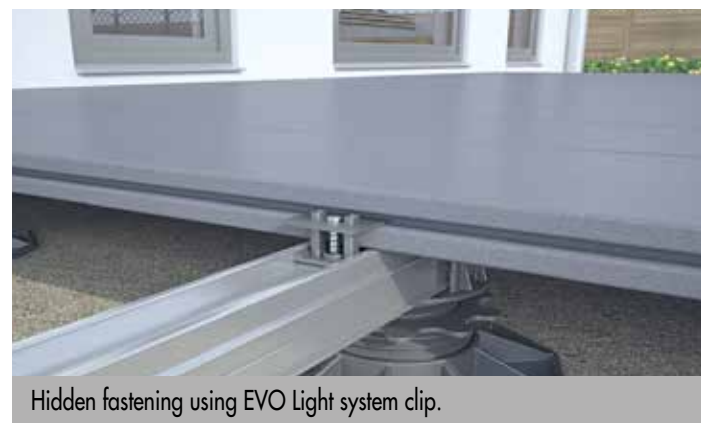


Art. no.	Dimensions [mm] ^{a)}	Material	PU*
946034	21 x 24 x 15	Plastic, black	200
Clamping plate	1,5 x 30 x 21,1	A2 stainless steel	

^{a)}Height x length x width

*Comes supplied with screw

APPLICATION IMAGE



Hidden fastening using EVO Light system clip.

NOTE

In case of deviations of the groove thickness, the screw length may change!

Please contact our technical department.

HIDDEN FASTENING

M-CLIP

The M-Clip can be used to fasten laterally grooved floorboards to our Eveco aluminium system profile or alternatively to a wooden substructure. Only low-movement wood types or WPC floorboards are suitable for concealed installation with the M-Clip.

Art. no.	Dimensions [mm] ^{a)}	Material	PU*
111896	9,5 x 22 x 32	Stainless steel 1.4016	200

^{a)}Width x length x height

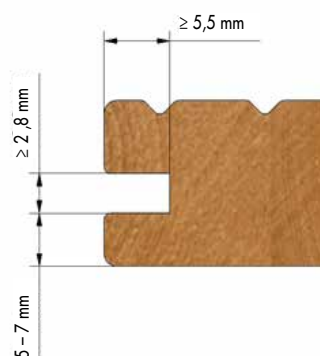
*Comes supplied with screw.

REQUIRED GROOVE GEOMETRY

Dimensions vary greatly according to supplier.

If you are unsure whether the product is suitable for your project, consult your timber dealer first and ask for the exact dimensions of the side grooves.

If you have any questions about the product, we will of course be pleased to assist.



DOUGLAS FIR



ADVANTAGES

- Quick and easy installation
- Can be combined with a large range of side groove geometries
- Automatically creates a board spacing of 6 mm

APPLICATION IMAGE



Hidden fastening with the M-Clip.

HIDDEN FASTENING

DECK GLIDERS

The decking glider can be used for decking boards with or without lateral groove. This product can be used with substructures made of wood, as well as our aluminium profiles EVO and EVO Slim, and the terrace support system HKP.

Art. no.	Dimensions [mm] ^{a)}	Quantity* [piece/10 m ²]	Material	PU
944830	10 x 190 x 20	123	Hard plastic	200

^{a)}Height x length x width

*Clearance of bearing beams = 600 mm, board width = 145 mm, Joint dimension = 5 mm (depending on type of timber). Please use decking multi angles or the StarterClip for the first and last bearing beams, and for the board butts.

Each deck glider includes 4 Thermofix screws made of hardened stainless steel. If required, you can additionally buy the glider screws in A2 or A4 stainless steel.

MINI DECK GLIDER

Art. no.	Dimensions [mm] ^{a)}	Quantity* [piece/10 m ²]	Material	PU
944767	10 x 140 x 14	200	Hard plastic	200

^{a)}Height x length x width

*Clearance of bearing beams = 500 mm, board width = 90-100 mm, Joint dimension = 5 mm (depending on type of timber). Please use decking multi angles or the StarterClip for the first and last bearing beams, and for the board butts.

Each Mini deck glider includes 3 Thermofix screws made of hardened stainless steel. If required, you can additionally buy the glider screws in A2 or A4 stainless steel.

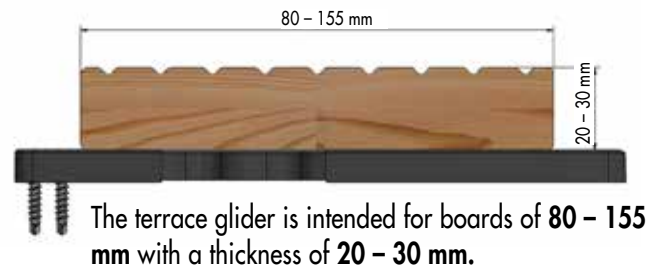
APPLICATION IMAGE



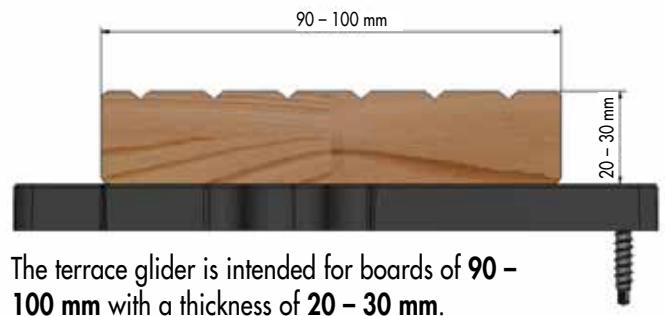
DOUGLAS FIR



REQUIRED DIMENSIONS OF BOARDS



REQUIRED DIMENSIONS OF BOARDS



NOTE

The scope of supply includes screws of hardened stainless steel. If required, you can order these screws in A2 or A4 stainless steel. The maximum thickness of the terrace boards depends on the length of the screws supplied.

HIDDEN FASTENING

T-STICK

For fastening the start and end planks, we recommend the Eurotec decking multi angle, or the Eurotec StarterClip.

The T-Stick can be used with substructures made of wood, as well as our EVO and EVO Slim aluminium profiles, and the HKP terrace support system.

Art. no.	Stainless steel plate*	Material	PU**
111857	A2	Plastic, black	125

*Stainless steel A4 plate available on request.

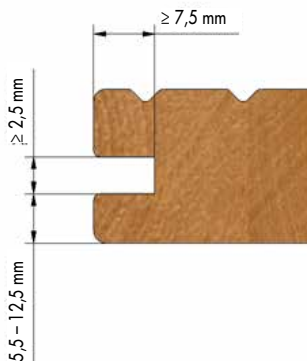
**Supplied with a drilling screw, which is suitable for wooden and aluminium substructures with a thickness of up to 3 mm.

REQUIRED GROOVE GEOMETRY

Dimensions vary greatly according to supplier.

If you are unsure whether the product is suitable for your project, consult your timber dealer first and ask for the exact dimensions of the side grooves.

If you have any questions about the product, we will of course be pleased to assist.



DOUGLAS FIR



ADVANTAGES

- Boards can be replaced easily even after the deck has been completed!
- Realigning individual boards is possible at any time.
- When they are fixed, the boards have a safe and firm seat.

APPLICATION IMAGE



Hidden fastening with the T-Stick.

NOTE

The supplied drilling screw is suitable for both wood and aluminium substructures.

For specific weather conditions, we can also supply sheets of A4 stainless steel.

HIDDEN FASTENING

V-CLIP

The V-Clip is designed for decking boards with an asymmetrical groove designed. (see Necessary groove geometry)

The V-Clip can be used with substructures made of wood as well as our Eveco aluminium system profile.

Art. no.	Dimensions [mm] ^{a)}	Material	PU*
111885	32,3 x 22,7 x 9,4	Stainless steel A2	250

^{a)}Length x width x height

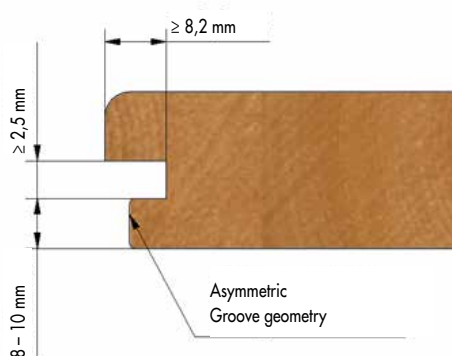
*Comes supplied with screw Ø 4,2 x 25 mm and 1 Bit/PU

REQUIRED GROOVE GEOMETRY

Dimensions vary greatly according to supplier.

If you are unsure whether the product is suitable for your project, consult your timber dealer first and ask for the exact dimensions of the side grooves.

If you have any questions about the product, we will of course be pleased to assist.



DOUGLAS FIR



ADVANTAGES

- Compatible with classic substructures made of wood as well as aluminium
- Uniform joint spacing of 7 mm

APPLICATION IMAGE



NOTE

Only suitable for the fastening of asymmetrical grooved decking made of dimensionally stable timber types or WPC.

HIDDEN FASTENING

DECKING MULTI ANGLES

The decking multi angle can be used with decking boards with or without a lateral groove. This product can be used with substructures made of wood as well as our aluminium system profiles and the HKP terrace support system.

Art. no.	Material	PU*
975584	Hard plastic	10

*40 system screws are included in the scope of delivery

NOTE

Supplements the deck glider and the T-Stick when fastening start and end boards.

Can be screwed to the substructure at the side and in front of the head.

STARTERCLIP

The StarterClip can be used for decking boards with or without lateral groove. This product can be used with substructures made of wood, as well as with our aluminium system profiles EVO and EVO Light, and the HKP terrace support system.

Art. no.	Material	PU*
975591	Hard plastic	10

*40 system screws are included in the scope of delivery

NOTE

Supplements the terrace glider and the T-Stick when fastening start and end boards.

DOUGLAS FIR



ADVANTAGES / PROPERTIES

- Supports constructive wood protection due to approx. 10 mm distance between substructure
- Weather-resistant

APPLICATION IMAGE



Hidden fastening of a start/end plank with the decking multi angle.



ADVANTAGES / PROPERTIES

- Supports constructive wood protection due to approx. 10 mm distance between substructure
- Weather-resistant

APPLICATION IMAGE



Hidden fastening of a start/end plank with the StarterClip.

HIDDEN FASTENING

DOUGLAS FIR

SNAP-IN FASTENER

The snap-in fastener can be used for decking boards with or without lateral groove. This product can be used with substructures made of wood as well as our aluminium system profiles EVO and EVO Light, the system profile Eveco, and the terrace support system HKP.

Art. no.	Material	PU*
975612	PP-C (polypropylene copolymer)	10

*4 pc. Thermofix screws 4,2 x 17 mm are included in the scope of delivery.

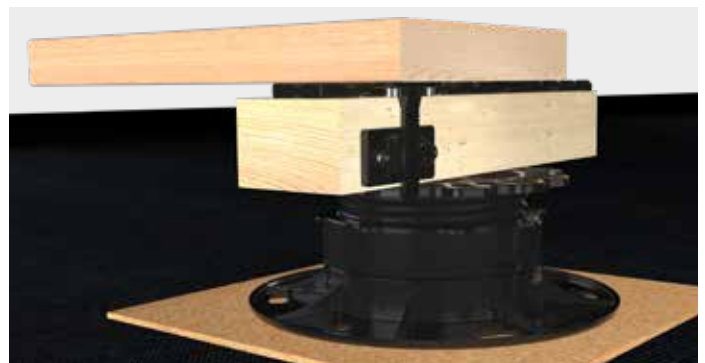
NOTE

Supplements the deck glider and the T-Stick when fastening start and end boards.

APPLICATION IMAGES



Fastening a wooden floorboard to the EVO aluminium system profile using the snap-in fastener.



Fastening a wooden floorboard to a wooden substructure using the snap-in fastener.



ADVANTAGES

- Quick and easy installation of the start and end floorboards.
- Adjustment range from 19,5 – 45,5 mm*
- Can be used in combination with both a wooden and an aluminium substructure.
- Both laterally grooved and non-grooved floorboards can be fastened without any problems.

*The adjustment range is calculated from the distance between the upper web of the plug and the attachment point of the clip to the substructure.

If you are not familiar with how this product is used, and particularly with the product's intended use, please contact our Application Technology department (technik@eurotec.team).