

# UPB<sup>®</sup> BOARDS

made of (Resvsta<sup>®</sup>)

- **100% water-resistant**
- **Easy to process like wood**
- **Customized color design**
- **Premium edge**
- **Thermoformable**
- **100% recyclable**



reddot design award  
winner 2017



**Green  
Product Award**

Winner

**CATEGORY ARCHITECTURE**

Installation Guideline Facade Products of  
**UPB BOARDS**  
Design-Board for Decorative Cladding



INTELLIGENTWOOD

UPB<sup>®</sup> Boards made of (Resvsta<sup>®</sup>)





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**GUARANTEE**  
on the  
material

**80 years**

no swelling  
no cracking  
no splintering  
no rotting

# 1. BASIC INFORMATION

## PROPERTIES

The following basic properties must be observed when using UPB profiles for facades:

### Thermal Properties

UPB profiles are made of thermoplastic material and therefore feature specific thermal properties.

The following points should be observed:

- cutting and installation should be performed at a constant material temperature
- please always note: avoid direct sunlight during storage and transport
- store in a cool and dry place, use cover panel
- thermal deformations due to the thermoplastic properties of the UPB boards must be taken into account during installation
- please observe installation instructions
- slight sagging of the profiles, ranging between 2 mm - 3 mm, can occur owing to their natural composition
- please inquire for applications

#### Note:

One of the unique features of the UPB boards is their ecoplus<sup>3</sup> technology, which reduces the force of thermal expansion to about 1/7 of conventional plastic boards. UPB boards made of Resysta can therefore be used with conventional fixing (as with wood for instance) so as to reduce the thermal expansion to a minimum.

### Homogenous Edge Cross-Section

The edges do not have to be laminated subsequently as these already feature a homogeneous cross section. Further processing can be effected immediately after each cut. Edge glue is not required. The edges only have to be rounded or sanded lightly, if required. We recommend treating the edges if the surface is to undergo colouration.







## 2. PROCESSING

### Planning

Plan the constructive support first, as UPB boards have no structural features.

### Processing

The products can be processed with any standard woodworking tools and machines. The machining options primarily include sawing, milling, drilling.

We recommend carbide-coated tools for circular saws and milling cutters.

### Sanding

Common woodworking sandpaper can be used.

#### Notes:

For unpainted surfaces use grain 24 to 60 in order to attain the structure.

Only use finer sandpaper (grain > 80) for removing dirt

Do not sand too deep, as otherwise the surfaces will lose their structure.

Sanding dust and milling cuttings must be collected separately. Do not mix with wood dust or burn. The collected waste can be reused and incorporated in new products.

### Screwing / Gluing

The profiles can be glued with a wide range of adhesives and joined with all common screws. This means special profiles such as end strips and angular profiles can be produced.

### Thermoforming

Thermoforming of profiles is easily feasible due to the thermoplastic properties.

Please refer to the Tech Info brochure for more detailed information. ([www.upb-board.com](http://www.upb-board.com))







## 3. SURFACE TREATMENT

We recommend surface treatment of facades to provide protection against damage caused by UV, dirt and moisture. A number of different design options are also available.

### Cleaning / Pre-Treatment

Sand surfaces lightly with sandpaper (P100) to remove any scratches, signs of use or irregularities. Remove sanding dust and other dirt. The substrate must be dry, firm and free of dirt and separating substances.

### Please note:

- Painting of the profiles is recommended before installation.
- Do not paint or varnish under the influence of direct sunlight.
- Due to technical conditions, sides and edges should be treated.
- Pre-treat the UPB surface with Resysta Primer and lightly flatten after drying. (240 grit)

### Transparent Coatings:

For transparent areas, it is recommended to only use products offered by Resysta. Depending on the wear, Resysta offers products especially adapted to the material, which have been specially tested for outdoor use and can also be safely used indoors.

	Product		
Transparently colored varnishes for decorative interior and exterior color design, e.g. facades, fences, soffits. Water-based, quick-drying and easy to work with.	RBP	Primer / base coat	Surface pretreatment and sealing
	RCL colored	Transparently colored varnish	Coloration and painting
	RCL clear lacquer	Clear lacquer	Optionally creates additional abrasion protection
Transparent colored stains with an additional 2-component clear lacquer for mechanically and chemically highly resistant interior and exterior surfaces, e.g. terrace floors and functional furniture. In the case of facades, the surface is graffiti resistant.	RBP	Primer / base coat	Surface pretreatment and sealing
	FVG	Transparent stain	For coloration
	RFS	2-component clear lacquer	For sealing and protection
Naturally transparently colored oils that can be quickly and easily applied and refreshed due to simple handling. Exceptionally well-suited for easily accessible areas such as floors.	RTO	Transparent oil	Coloration and protection

### Top Coatings:

Resysta paints or standard aqueous and solvent-based products can be used here. The choice of the respective product depends on application area and requirements.





## 4. APPLICATION EXAMPLES

We have tested many dimensions for facade elements for years and have summarized the recommendations. Please do not use larger sizes for facades than stated here! Please also use the specified plate thickness, as lesser thickness may cause deformation!

For technical support, please contact Intelligent Wood.

For applications carry out tests beforehand.

Product	Length mm	Width mm	Thickness mm
Rhomb Profile 110x20	2400	110	20.00
Rhomb Profile TIGA 110x20	2400	110*	20.00
Tongue and Groove profile 140x12	2400	190**	12.00
Casing Board lintel formwork	2400	90	16.00
Casing Board lintel formwork	2400	160	16.00
Clapboard 600 x 300 x 8	600	195	8.00
Clapboard 900 x 300 x 8	900	195	8.00
Clapboard 1200 x 300 x 8	1200	195	8.00
Facade Board STRAP 600 x 300 x 12	600	300	12.00
Facade Board STRAP 900 x 300 x 12	900	300	12.00
Facade Board STRAP 1200 x 300 x 12	1200	300	12.00

\* visible surface with given groove 107 mm

\*\* visible surface with groove 175 mm





## 5. GENERAL INSTALLATION INFORMATION

### Important Information:

- All necessary DIN standards and regulations must be complied with.
- The assembly must be carried out according to the general technical rules.
- Only install as curtain-wall facing with air space.



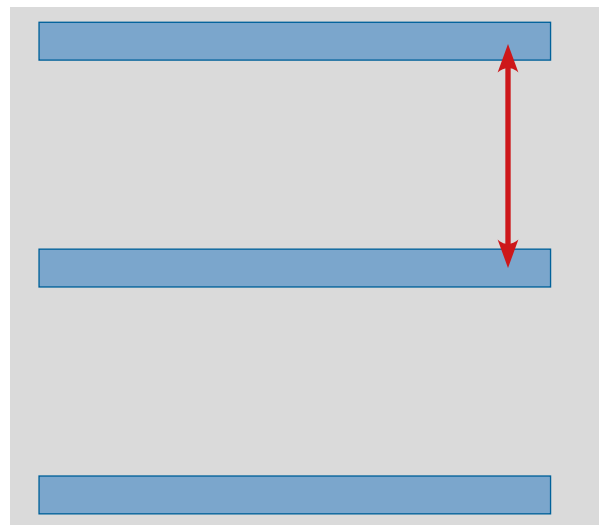
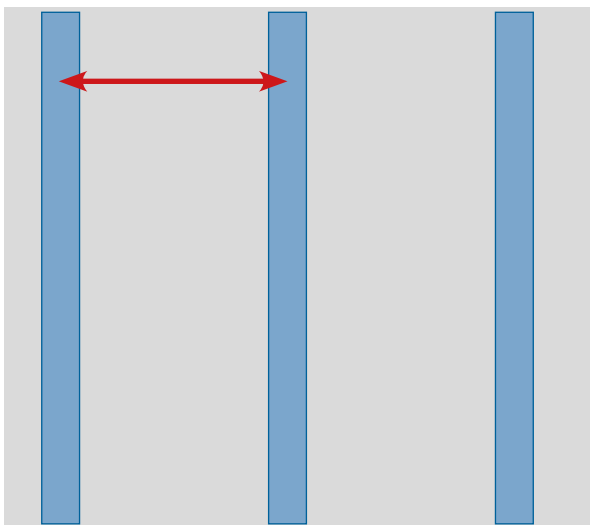
Rear ventilation distance must be at least 20 mm and must not be narrowed. Rear ventilation from thermal drive must be provided for.

With regard to minimum ventilation cross-section of the substructure, observe and comply with the current standards. (e.g. DIN 18516-1).

For horizontal lathework, vertical battens (counter battens) are recommended.

### 5.1 Substructure

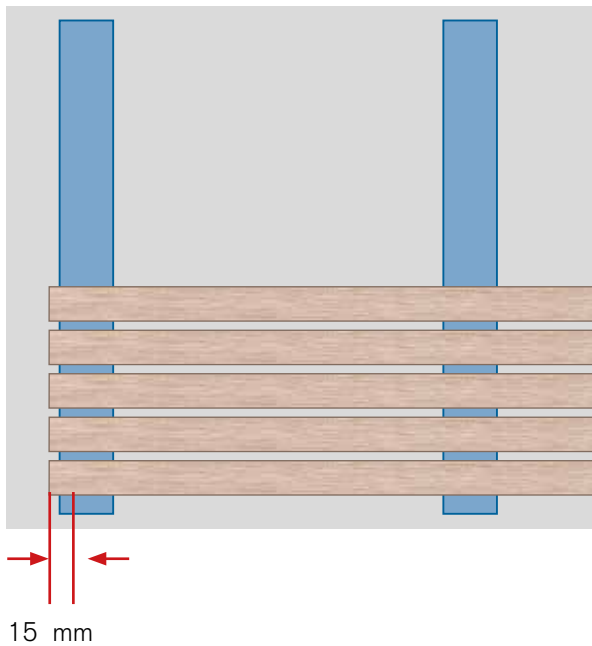
- Depending on the products, the substructure must be realised vertically or horizontally. (counter battens might be required)
- The specified maximum substructure distances must be strictly complied with. The distances are calculated center / center.
- The substructure mounting depends on the substrate. The fasteners must be chosen correspondingly.
- The substructure must be aligned horizontally and vertically.
- We primarily recommend aluminum substructures as this material meets the durability of UPB boards.
- The corresponding technical rules must be observed for installation.



*specified substructure distances are always meant center-center*

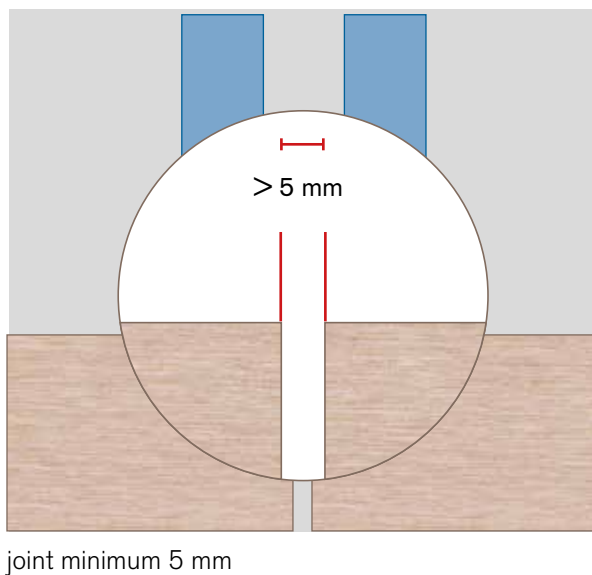
## 5.2 Important Installation Information

### 5.2.1 Maximum Protrusion



To avoid curvature upwards at the edge, limit the protrusion to the first fastening point to maximum 15 – 20 mm.

### 5.2.2 Joints



Between the profiles a joint of at least 5 mm has to be provided for. When adjoining other structures, a joint of at least 5 mm must also be adhered to.

#### Note:

3 mm joint spacing must be factored into the planning for each 1 m profile length in case of free expansion. A maximum temperature difference of 50° is taken account of here.



## 5.3 Fasteners

Fastening is usually done with screws. For individual applications, other suitable fasteners may be used.

Hints:

- pre-drilling is necessary
- choose fasteners according to application
- select screw heads and fasteners that are big enough
- adjust bore according to size to the screw type.
- use materials suitable for outdoor use (stainless)

Choose screws appropriate for the substructure.

### Note:

The sizes and lengths of the fasteners can vary, depending on the application. Fasteners suitable for the individual case must be chosen. These primarily depends on the substructure used.

Facade products and accessories can be obtained from suppliers offering suitable products. A choice of possible suppliers:

Supplier	Product	Website	Contact	Phone	Email
Etanco	Aluminium lower edges	<a href="http://www.etanco.de">www.etanco.de</a>	Ms Kettner / Ms Schlich	+492739875460	<a href="mailto:info@etanco.de">info@etanco.de</a>
Eurotec	Screws (coloured), fastening systems	<a href="http://www.eurotec.team">www.eurotec.team</a>	Technical sys- tems	+492331624544	<a href="mailto:technik@eurotec.team">technik@eurotec.team</a>
FIXINGGROUP	TIGA Fastening system	<a href="http://www.fixinggroup.com">www.fixinggroup.com</a>	Günther Felber	+436643505363	<a href="mailto:g.felber@fixinggroup.com">g.felber@fixinggroup.com</a>
HECO	Screws	<a href="http://www.heco-schrauben.de">www.heco-schrauben.de</a>	Frank Bürkert	+4989998847-35	<a href="mailto:f.buerkert@heco-schrauben.de">f.buerkert@heco-schrauben.de</a>
Innotec	Adhesive ADHESEAL	<a href="http://fassadenverklebung.de/">http://fassadenverklebung.de/</a>	Depending on region	+49284178670	<a href="mailto:verkauf@innotec-online.de">verkauf@innotec-online.de</a>
Reisser	Screws	<a href="http://www.reisser-screws.com/divisionen/dach-wand/home/">www.reisser-screws.com/ divisionen/dach-wand/home/</a>	Mr Kiening	+497940127-0	<a href="mailto:Info@REISSER-screws.com">Info@REISSER-screws.com</a>
SFS Intec	Screws, aluminium lower edges	<a href="http://www.sfsintec.de">www.sfsintec.de</a>	Mr Martin Bauer	+49 17611700230	<a href="mailto:martin.bauer@sfs.biz">martin.bauer@sfs.biz</a>

## 5.4 Suggested Mounting

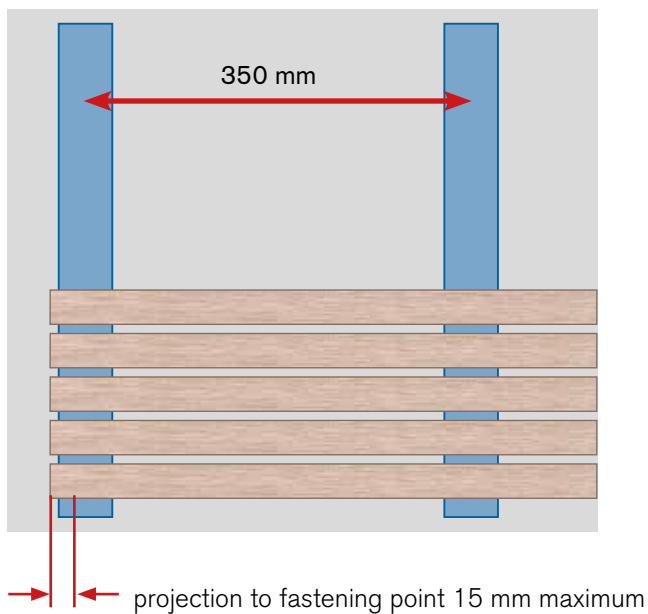
### 5.4.1 Rhombus Profile Mounting

Rhombus profiles are generally installed horizontally. Vertical assembly is not recommended owing to inadequate drainage. For visual reasons, a staggered layout is recommended for the joints.

Product	Maximum lower edge spacing (centre/centre)	Joint	Note
rhomb profile 110x20	350 mm	> 5 mm	fastening 2 screws suitable for substructure

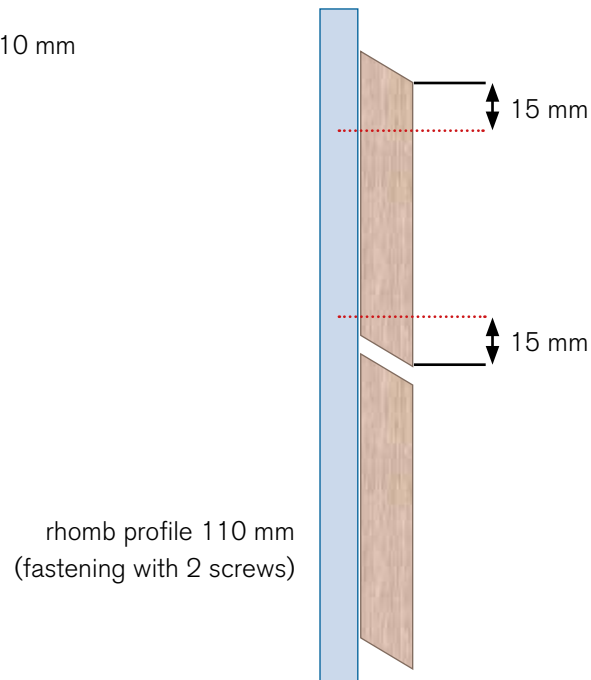
### Substructure / Protrusion

lower edge distance maximum 350 mm



# Installation

profile screw connection 110 mm



## Screwing

- countersunk screws: pre-drilling = shank  $\varnothing$  of the screw
- button head screws: pre-drilling = +0.5 mm to the screw diameter

### Note:

To attain a straight line during assembly, we recommend using spacers. For visual reasons, the joint should be  $> 5$  mm in the longitudinal direction.



## 5.4.2 Rhomb TIGA System Mounting

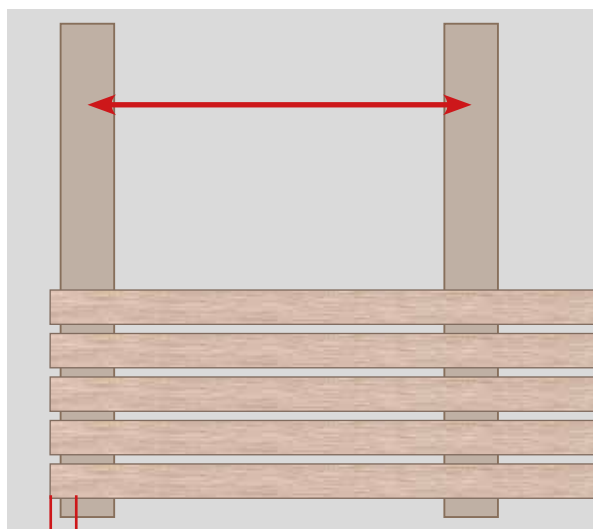
Rhomb profiles with the TIGA system are generally installed horizontally. Vertical assembly is not recommended owing to inadequate drainage. For visual reasons, a staggered layout is recommended for the joints.

With the TIGA system, a corresponding tongue and groove is milled using special milling cutters. The assembly is invisible with the TIGA system clips. The distances in the longitudinal direction are specified by the clip.

Product	Maximum lower edge spacing (centre/centre)	Joint	Fasteners
rhomb profile TIGA 110 x 20	350 mm	System	TIGA System

### Substructure / Protrusion

lower edge distance maximum 350 mm

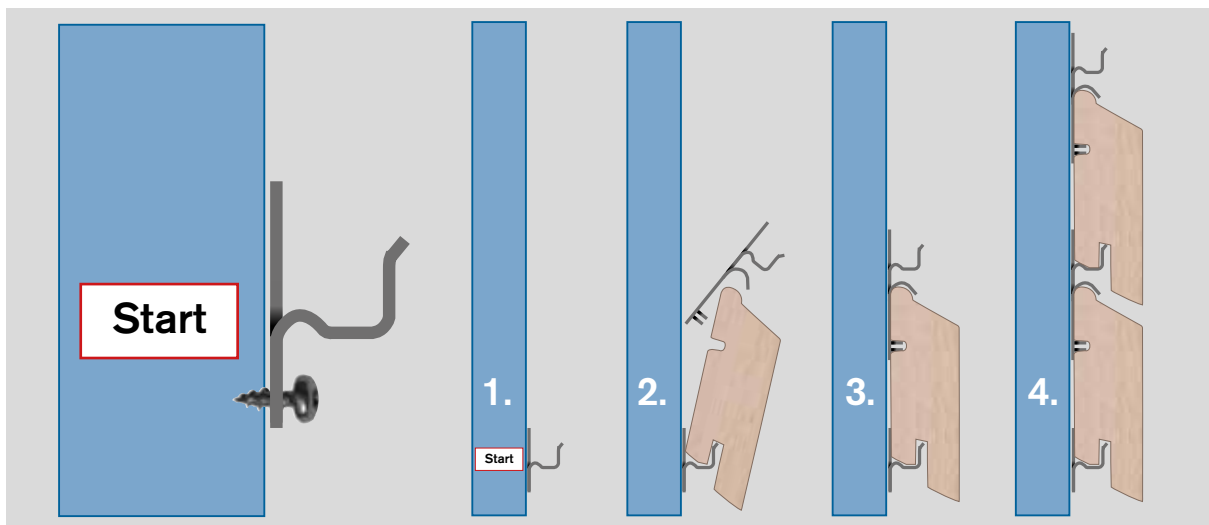


→ → projection to fastening point 15 mm maximum

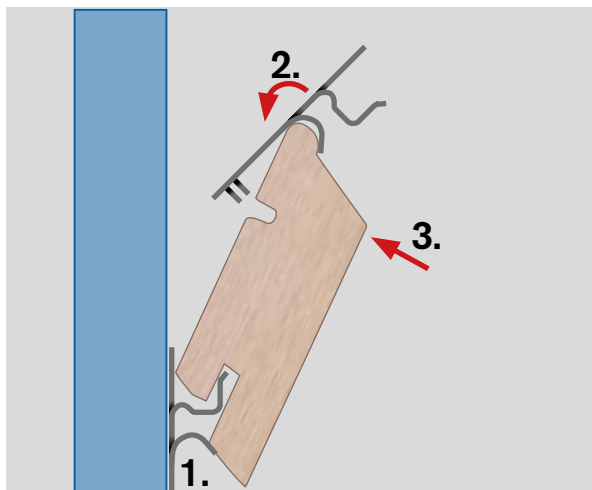
#### Note:

Maximum protrusion to the first fastening point 20 mm.

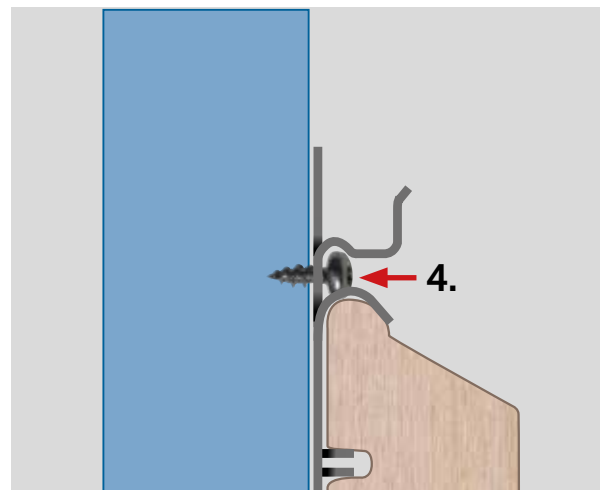
## Assembly



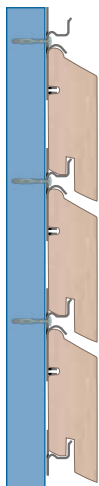
fasten start clip on the lower edge and  
insert profile



1. fasten start clip on the lower edge and  
insert profile
2. attach 2nd clip on the profile
3. screw in profile towards lower edge



screw clip on the lower edge



repeat steps until complete assembly

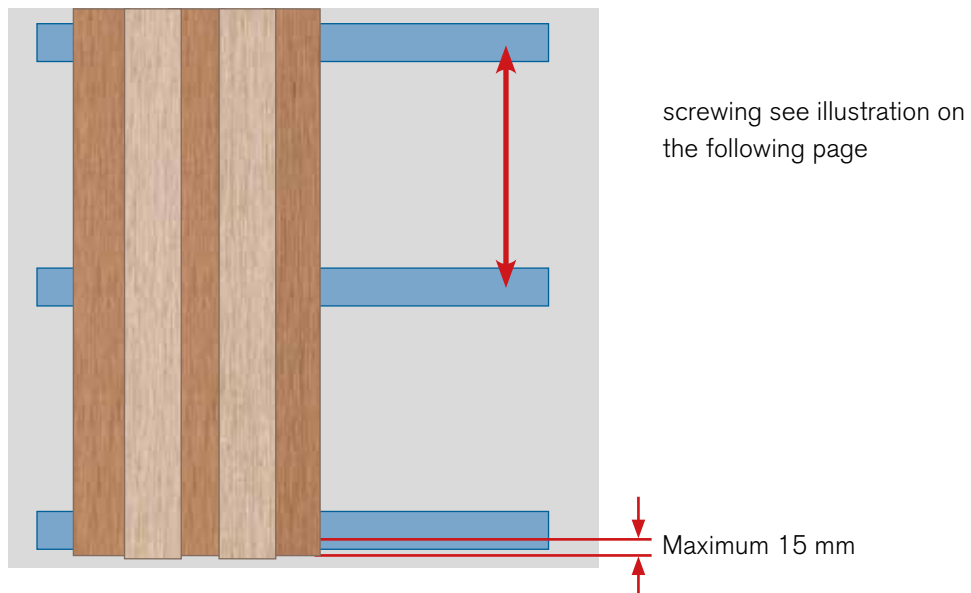
### 5.4.3 Lintel Formwork Mounting (base-top)

Base and top profiles are usually installed vertically. Horizontal assembly is not recommended owing to inadequate drainage. Both the 90 mm profile as well as the 160 mm profile can be used as ceiling.

Product	Maximum lower edge spacing (centre/centre)	Joint	Fasteners
Casing board base (160 mm) and top (160 mm / 90 mm)	350 mm	> 5 mm	appropriate screw for UPB board and sub-structure

### Substructure / Protrusion

lower edge distance maximum 350 mm



projection to fastening point 15 mm maximum

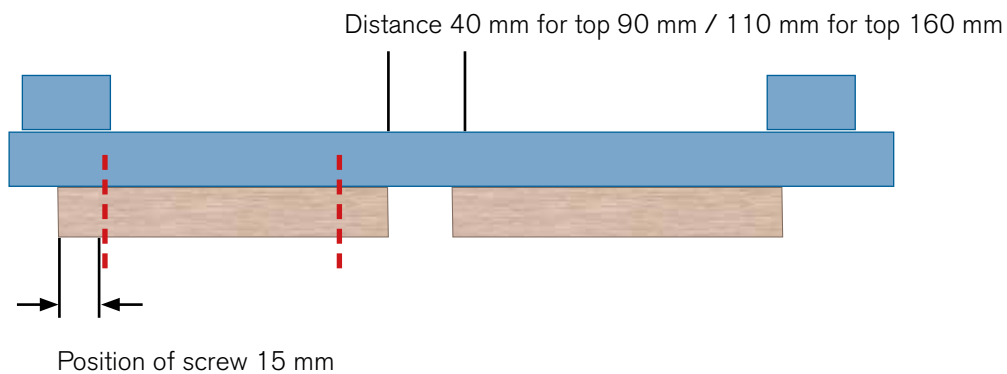
### Screwing

- base with countersunk screws: pilot hole =  $\varnothing$  screw shank
- cover
  - countersunk screws: pilot hole =  $\varnothing$  screw shank
  - button head screws: pilot hole = +0.5 mm screw diameter

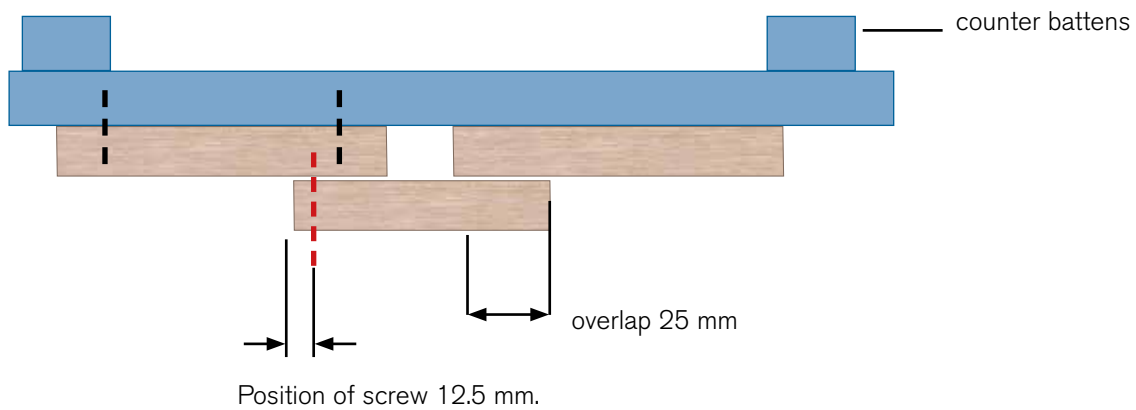


# Assembly of Lintel Formwork (base-top)

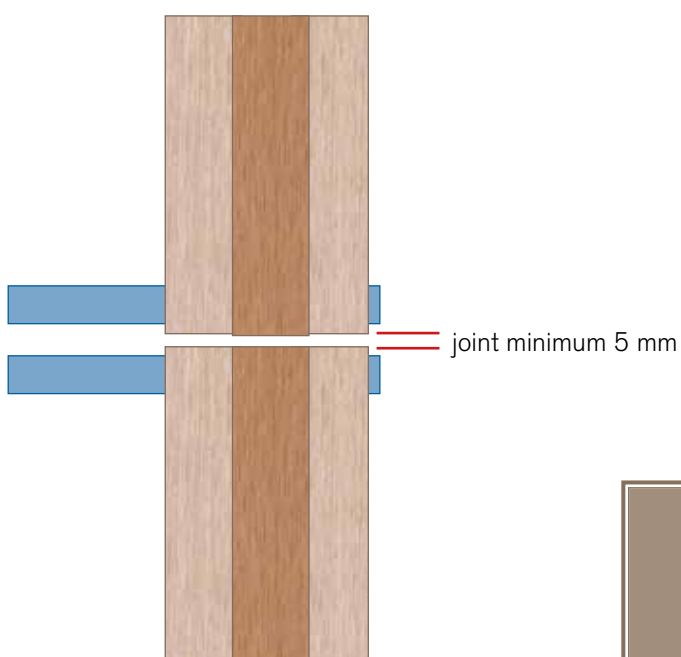
## 1. Base mounting



## 2. Top Mounting



Joint in connection



### Note:

For base screw connection offset this slightly in height in order to avoid an overlap with the screw for the ceiling.

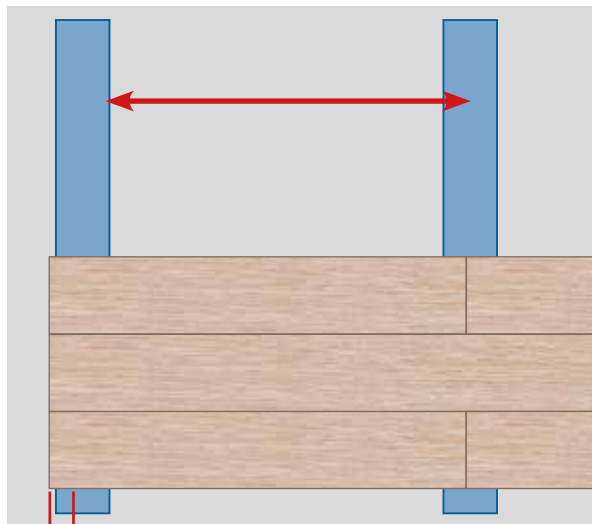
## 5.4.4. Tongue and Groove Mounting

Tongue and groove profiles can be installed horizontally and vertically. For visual reasons, a staggered layout is recommended for the joints.

Product	Maximum lower edge spacing (Centre/Centre)	Joint	Fasteners
Tongue and groove profile 140 x12	350 mm	approx. 3 mm recommended	Suitable screw

### Substructure / Protrusion

lower edge distance maximum 350 mm



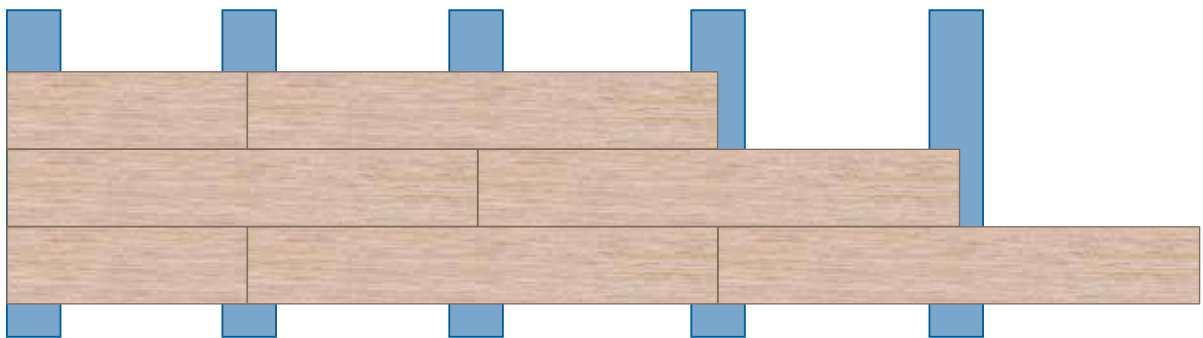
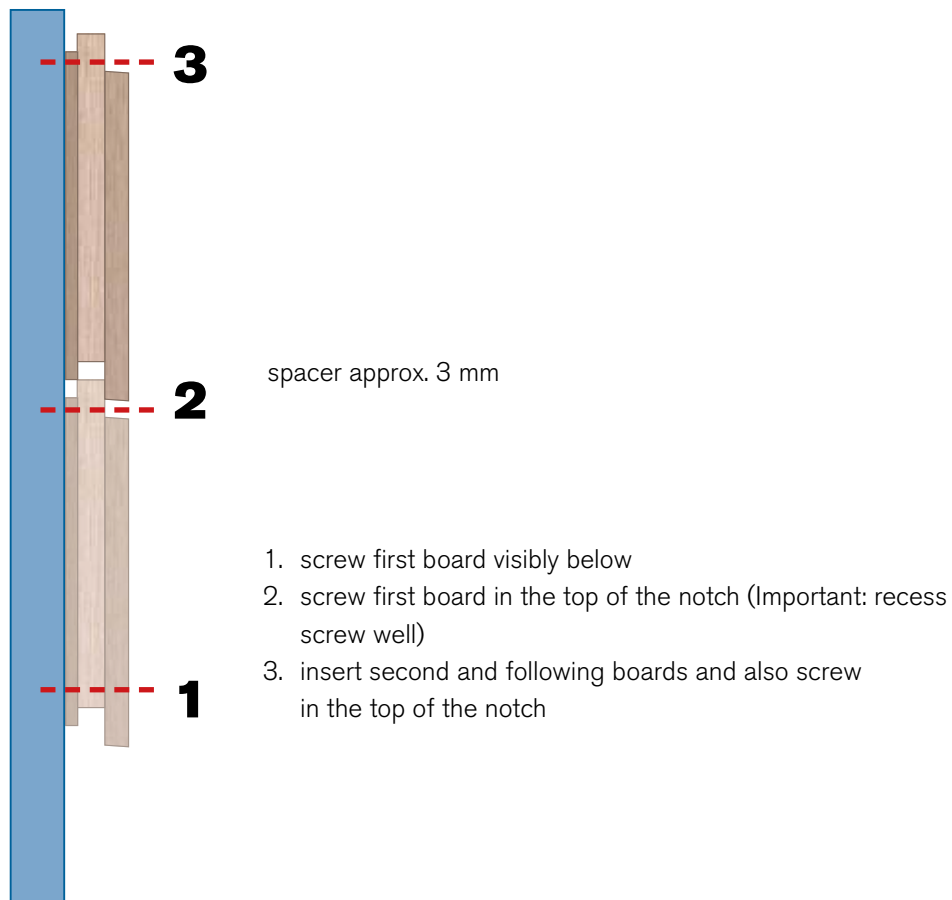
→ → protrusion to fastening point maximum 15 mm



#### Screwing

- countersunk screws: pre-drilling = Ø screw shank

## Installation



Bonded laying. We recommend the joints on the lower edge.

### Notes:

Ensure a straight alignment during assembly.  
Projection to fastening point 15 mm maximum.

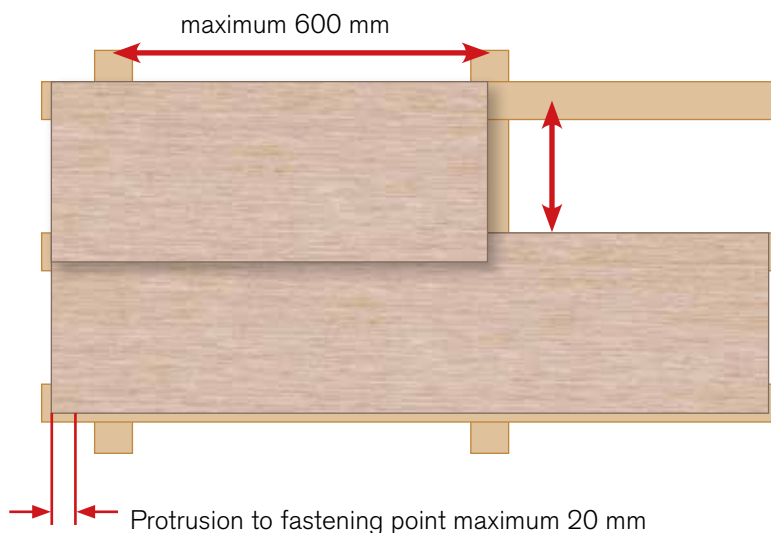


## 5.4.5 Clapboard Mounting with Overlap

Clapboards are generally installed horizontally. Vertical assembly is not recommended owing to inadequate drainage. For visual reasons and stability, a staggered layout is recommended for the joints. Shingles with various lengths can be combined here

Product	Maximum lower edge spacing (centre/centre)	Joint	Fasteners
Clapboard 600 x 195 x 8	275 mm	0 mm	appropriate screw for UPB board and substructure see below
Clapboard 900 x 195 x 8			
Clapboard 1200 x 195 x 8			

### Substructure / Protrusion

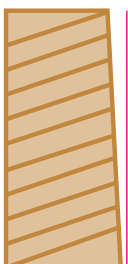


#### Screwing

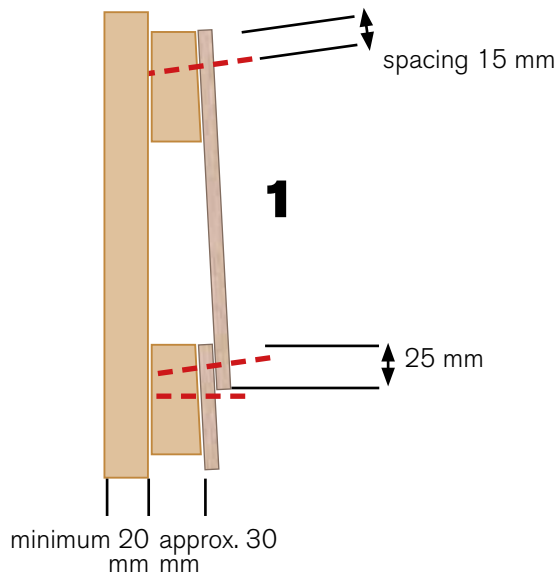
- countersunk screws:  
pre-drilling = Ø screw shank

#### Note:

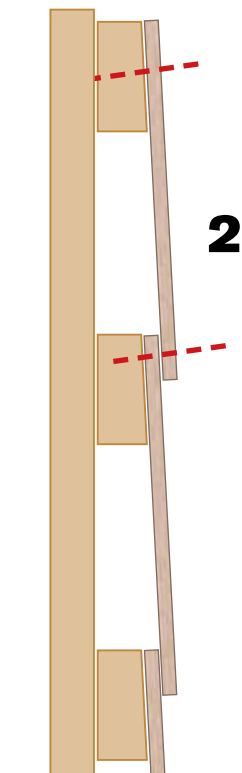
For shingles we recommend a substructure made of suitable wood.  
Unilaterally aligned to the resulting slope. (approx. 2°)



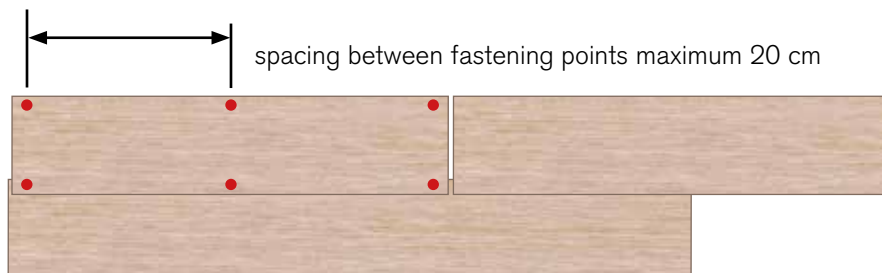
## Installation



1. mount strips of Resysta on the lower edge
2. fasten first clapboard on the lower edge
3. fasten clapboard below on the strip and lower edge (edge / fixing distance – 15 mm)



attach further clapboards as follows



### Notes:

projection to fastening point 15 mm maximum  
ensure a straight alignment during assembly

## 5.4.6 Facade Board Mounting

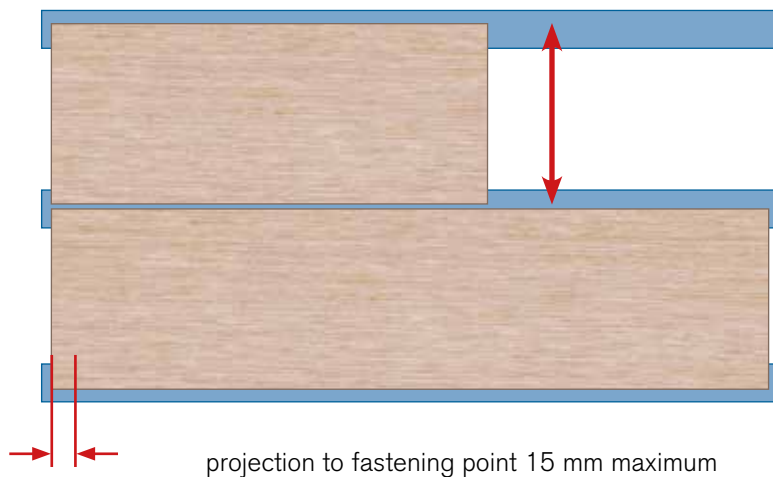
### Strap 600 x 300 / 900 x 300 / 1200 x 300

Tongue and groove profiles can be installed horizontally and vertically.  
For visual reasons, a staggered layout is recommended for the joints.

Product	Maximum lower edge spacing (centre/centre)	Joint	Fasteners
Facade board strap 600 x 300 x 12	300 mm + joint spacing	min. 5 mm	appropriate screw for UPB board and substructure see below
Facade board STRAP 900 x 300 x 12			
Facade board STRAP 1200 x 300 x 12			

### Substructure / Protrusion

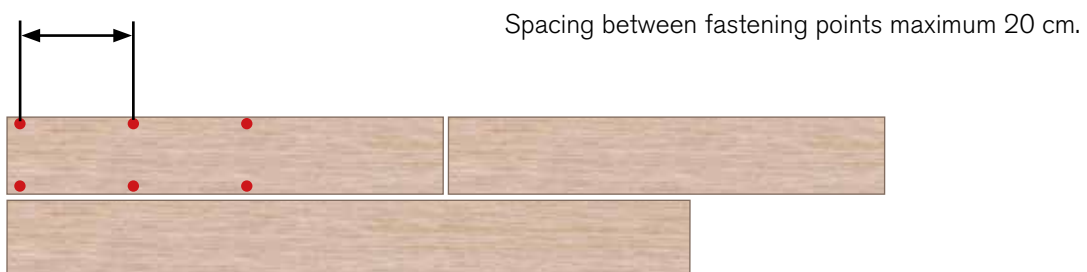
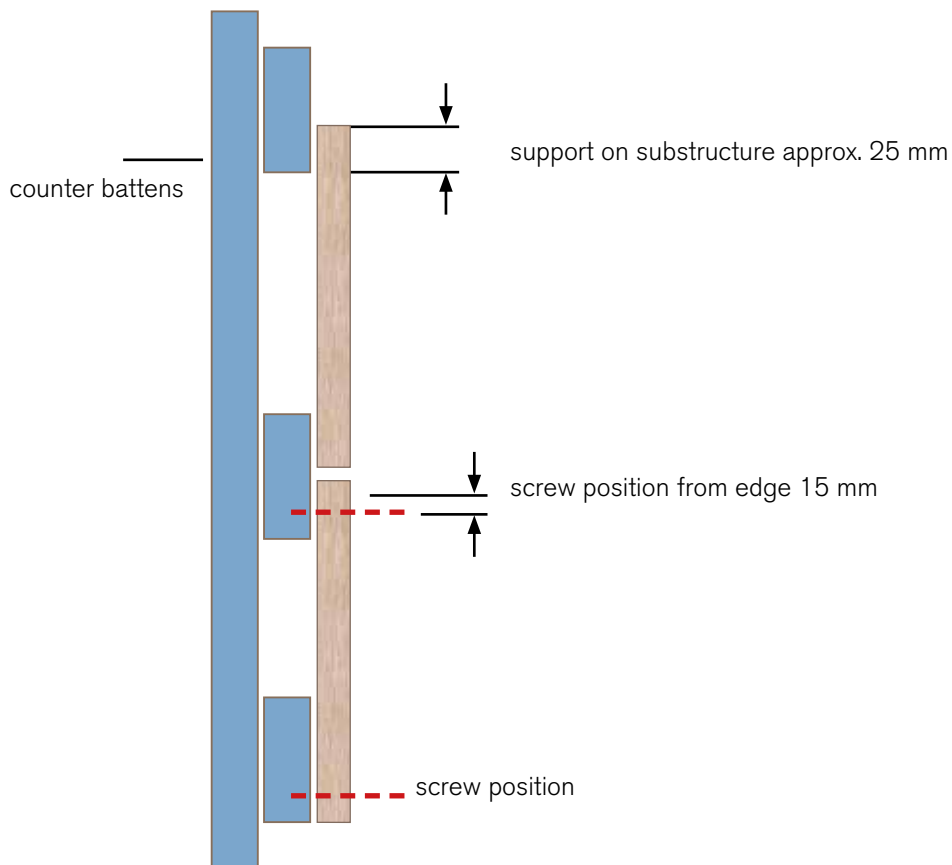
lower edge spacing 300 mm + joint spacing



### Screwing

- countersunk screws: pre-drilling = Ø screw shank
- button head screws: pre-drilling = +0.5 mm screw diameter

## Installation



### Notes:

projection to fastening point 15 mm maximum  
ensure straight alignment during assembly

## **5.5 Corner Ends, Window Sills, Connections**

Corner ends, window sills etc. can be cut and made individually from Resysta UPB boards.

Diverse profiles such as corner profiles can typically be made by screwing or gluing.

Choose the fastening points corresponding to the material thickness during assembly to prevent sagging.

Depending on the finish, full support by means of an appropriate substructure is recommended.

The projecting lengths should not exceed 15 mm.



## **6. CLEANING / CARE / REPAIR**

### **6.1 Surfaces Treated with RCL 1-K Lacquer**

#### **Care Information:**

The surface can be cleaned with mild standard household cleaners and water.

Faded, weathered or mechanically abraded surfaces can be freshened up again easily by renewed application.

#### **Increased Resistance:**

To increase the mechanical resistance, it is possible to seal the surfaces additionally with RCL C00 clear varnish.

### **6.2. Surfaces sealed with RFS 2K varnish**

#### **Care Information:**

The surface can be cleaned with mild standard household cleaners and water.

If surfaces have been subject to high strain, we recommend renewing the surface sealing – depending on the extent of wear – before the varnish coating wears off. Expensive repair can be avoided in this way.

### **6.3. Information on Use:**

Sealers are subject to wear and tear. The individual service life depends on the layer thickness and the degree of stress. Abrasive stress may scratch the surface. A sophisticated appearance of the coating surface requires regular cleaning and maintenance. To increase UV resistance, we therefore recommend treating the surfaces beforehand with pigmented Resysta materials.

### **6.4. Repair Information:**

Scratched or mechanically worn surfaces can be freshened up again easily by renewed application of the material. Before reapplying, clean surfaces, sand slightly and remove sanding dust. The varnish or oil is applied as described in the working instructions.

## 7. FURTHER INFORMATION

### Transport

- use cover panel
- use edge protection

### Storage

- Store the boards horizontally on even and flat bases.
- The pallet size should correspond to the board size when storing on pallets.  
The boards should not overhang, as they could otherwise deform.
- Store in a dry place.
- Avoid exposure to direct sunlight.

### Packing

- Protect from penetration by moisture.
- Do not pack airtight (e.g. with films).

### Disposal

The products can be recycled 100% without any problem and processed into new Resysta products.  
The following specifications must be observed:

- Do not burn cut-offs, residual material and sanding dust.
- If residual pieces accumulate, dispose of these properly.
- Cut-offs and sanding dust can be collected and sent for recycling.



For detailed questions regarding recycling, please contact your dealer, get in touch with INTELLIGENT WOOD or visit the Internet site: [www.resysta.de](http://www.resysta.de)



Vinyl Plus supports the Resysta Recycling Concept

## 8. LEGAL INFORMATION

UPB profiles and boards from Resysta do not have a building approval and are not suitable for supporting or structural purposes.

Approvals must be clarified with the authorities in individual cases.

The local building regulations must be observed.

The construction and mounting must be carried out according to the general state of the art and corresponding to the relevant application field and purpose.

Check the material for quality before installation.

Observe all current standards and regulations.

Fire behaviour: The requirements in respect to flammability depend on the relevant regulations and the required fire behaviour. Intelligent Wood profiles are normally flammable as standard.

Information and data contained herein is deemed to be correct and has been obtained from sources regarded as reliable. Resysta International GmbH gives neither explicit nor implicit assurances of any kind in respect to the correctness or completeness of the information and data contained herein.

Resysta International GmbH is not liable for claims arising from use of or trust in the information and data contained herein, irrespective of whether the claim is based on this information and data being incorrect, incomplete or misleading in any other way. It only serves for evaluation, examination and checking by the user. On account of possible technical modifications, it is the responsibility of the user to obtain the latest information.

Products of Resysta International GmbH/INTELLIGENT WOOD are manufactured for professional and industrial processors as well as for experienced DIY enthusiasts with basic knowledge of the trade. The working instructions provided in this procedure are to be regarded as nonbinding recommendations and do not represent any liability whatsoever. These recommendations are based on our experience and test series and are intended to facilitate and assist the work of our buyers. Any potential deviation from the ideal work conditions is the responsibility of our buyers and can effect the (end) result of the application. However, this does not exempt buyers from their obligation to check the product and its suitability for their project, preferably by a trial working. In all cases of doubt regarding the handling or working of the purchased product, our material advisors or application and laboratory technicians will be pleased to provide information to the best of their knowledge. Resysta International GmbH/INTELLIGENT WOOD of course guarantees a defect-free quality of its products according to the relevant product specifications, but the responsibility for use of the products supplied lies solely with the buyer. Unless we have assured specific properties and suitability of the products for a contractually agreed intended use explicitly and in writing, technical application advice or consultation, even if provided to the best of the giver's knowledge, is nonbinding in all cases and does not represent any guarantee whatsoever. Resysta International GmbH/INTELLIGENT WOOD is liable for the application of its products by its buyers in accordance with its Terms and Conditions of Business, to which the user's attention is drawn. The current assembly information and technical information sheet can be ordered on request or is available for downloading from [www.intelligent-wood.de](http://www.intelligent-wood.de). The validity of the previous editions expires upon publication of the new edition.

As at: 2019-10-31

Water-resistant panel with the natural look & feel of wood

**UPB® BOARDS** made of (Re)systa®



Version October 2019 | International

### **INTELLIGENT WOOD**

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