

INSTALLATION GUIDE RESYSTA FACADE

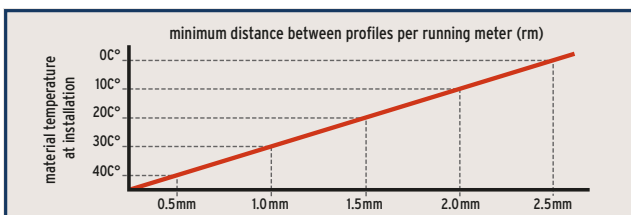


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BASICS

- The dimensional change of profiles made of Resysta is solely dependent on the thermal expansion. Air humidity and water have no influence on dimensional change. Thermal expansion has to be considered at installation.



- Cutting to length should be carried out at consistent material temperature. Therefore, the material should be stored in the shade or in areas where it is not exposed to direct sunlight. The material can warm up considerably in the sun, leading to an increased change in length. In the case of more distinct fluctuations in material temperature, cutting to length may have to be adapted accordingly. At a temperature difference of 10°, the deviation amounts to approx. 0.4 mm per running meter.
- Profiles made of Resysta have a high vapor diffusion resistance. Please consider at installation.
- Profiles produced of Resysta have the flammability classification B2 (normal flammable according to DIN 4102), with additives, B1 is achievable. For projects requiring B1 classification please send inquiry for profiles separately. Facade profiles are construction materials which have to fulfil the requirements of the state building code. Further information may be obtained at your responsible building authority and fire-prevention department respectively.
- Please comply with the regulations of the relevant waste management. You may under no circumstances burn profiles made of Resysta.

The PLUS for facades:

- Sustainable alternative to tropical wood
- Weather-resistant
- Dimensionally stable
- UV-resistant
- Individual color design
- Permanently colorfast
- No greying or flaking of the surface
- Fire protection class B1 on inquiry
- No cracking
- Durability class 1 to fungal attacks
- Easy installation
- Recyclable

Wood preservation – properties in comparison to wood

In comparison to wood and owing to the material properties the following does not apply to Resysta:

- Discolouring of the surface due to chemical decomposition and washing out of wood components
- Resin discharge
- Surface erosion
- Crack formation due to expansion and shrinking
- Ingress of moisture (water)
- Dishing due to varying moisture spreading
- Capillary action at frontal area

Storage

- Please store products made of Resysta horizontally on level surfaces.
- The profiles should never be covered with plastic foil or the like – no matter if already mounted or not. Condensation and accumulated water can cause staining.

PRODUCT RANGE

FPHR 10520 105 x 20 mm	FPH 14020 140 x 20 mm	FPH 13020 (available in B1) 130 x 20 mm	FPH 7020 70 x 20 mm	FPH 7518 (available in B1) 75 x 18 mm
				

GENERAL INFORMATION

The installation should be carried out by a skilled specialist.

Standard woodworking tools can be used for the material processing.

Sawing:

Profiles made of Resysta may be cut longitudinal and transversal with all customary saws.

Milling:

Any profiles can be milled easily by means of customary woodworking machines.

Grinding:

Profiles made of Resysta should be ground in longitudinal direction only. Depending on the required surface structure, we recommend the use of sand paper with grit between 24 and 60. Fine-grit sand paper should only be used for the removal of dirt.

Drilling:

Drilling can also be done with customary standard wood drills.

Varnishing:

Profiles made from Resysta can be treated with Resysta paints. Specially developed, carefully coordinated colors are available in the Color Concept. Colors and sealing specially developed for profiles made from Resysta should be used exclusively.

Cleaning and care:

Profiles made of Resysta are extremely easy to maintain. Please refer to cleaning and maintenance details specified in the separate information sheet or at www.gercona.com

SURFACE TREATMENT

The surfaces of the Resysta profiles have a beautiful, natural wood look. Nevertheless, there are no limits to individual creativity when it comes to color design. Whether classically elegant, modern or discreetly traditional, there is a colored glaze for every taste adapted to the profile surface. An overview of the available color shades can be seen at www.gercona.com under Colour Concept. To increase the mechanical and chemical resistance and protection against staining we recommend sealing of the surface with the especially adapted transparent 2-component varnish.

In case the surface treatment was not ordered at the manufacturing plant, the environmentally friendly, water soluble glazes, colored varnish and protection varnish can be obtained from the company Gercona. In any case the profiles should be coated before assembly, detailed application instructions will be provided.

Resysta should not be treated with harsh cleaning agents (e.g. containing acid and chlorine), as these can damage the surface of the material.



Please do not apply the glaze under direct exposure to sunlight or at high risk of rain. The glaze should be applied rapidly and with a broad paint-brush.

Resysta is an innovative material made of polymers and rice husks which does not have the typical wood properties such as graying, tearing, splintering. The basic assembly only differs from the assembly of other products in certain areas due to the special properties of Resysta.

INSTALLATION GUIDE

1. Substructure facade

The substructure has to be designed according to professional carpentry requirements. The weight and the high diffusion resistance of Resysta have to be taken into consideration. Fastening of the facade is generally carried out on a wooden substructure. Please attend amongst other to the following guidelines for substructures:

- Wood must correspond to sort-classification S10 according to DIN 4074.
- Individual cross-section must be chosen according to DIN 1052.
- Wood has to be preserved according to DIN 68800 – wood preservation in building construction
- Wooden battening and joists have to be screwed diagonally with 2 screws (A2) at the cross-over point.
- Fixation with fasteners approved by building authorities and according to manufacturer specifications.
- The substructure has to be adjusted in alignment and perpendicular orientation.

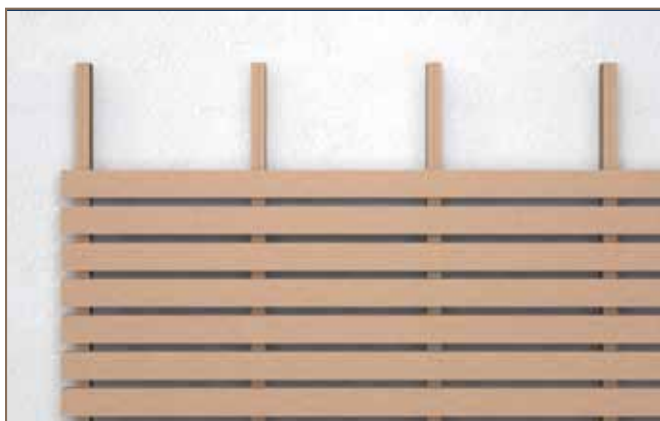
We explicitly recommend the use of the Resysta substructures because of their durability and water resistance. For more detail please refer to www.gercona.com

2. Rear ventilation



Due to the high diffusion resistance of profiles made of Resysta, a rear ventilation of the facade is always required. The rear ventilation distance must measure at least 20 mm and may not be reduced. The air inlet opening and venting opening must be 20 mm wide end-to-end.

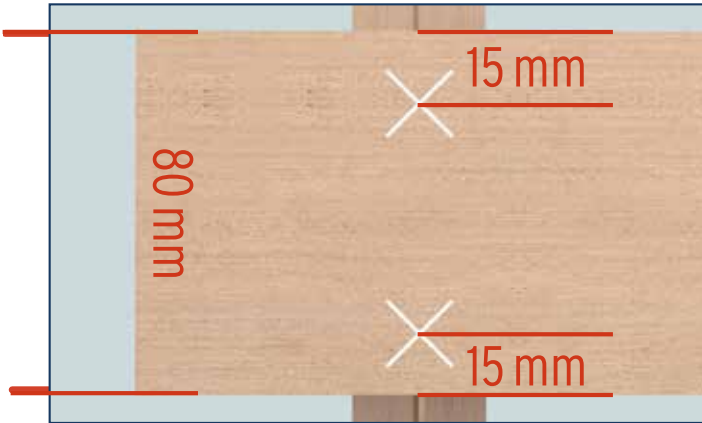
3. Fixing distances



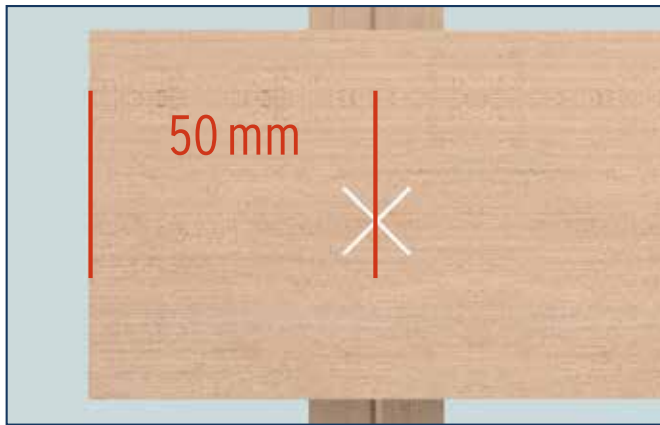
Recommended maximum fixing distances at upright installation is uniform at all profiles 625 mm. It has been chosen so that the maximum bending is $1/300$ of the fixing distances. Bending is caused by the weight of the profiles and the different warming of the separate material layers due to sunlight exposure.

4. Screws/screw mounting

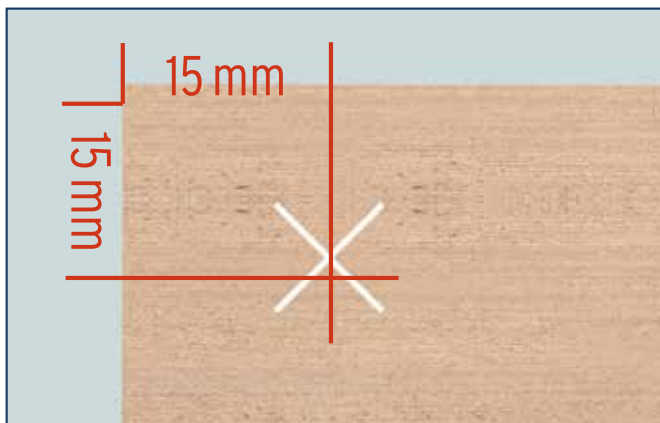
In the case of visible screw mounting on the front side, due to the potential change in length, the drill holes must be approx. 1 mm larger than the screw diameter. When screw mounting into the material, the screw depth should be approx. 3 times the diameter of the screw ($3 \times \varnothing$). Profiles made of Resysta should be pre-drilled with 0.7 – 0.8 times the screw diameter ($0.7 - 0.8 \times \varnothing$).



For profiles made of Resysta, which are more than 80 mm wide, 2 screws / fasteners have to be used breadthways.



The distance between profile end and screw may not exceed 50 mm.



The distance of the screw to profile edge must measure at least 15 mm.

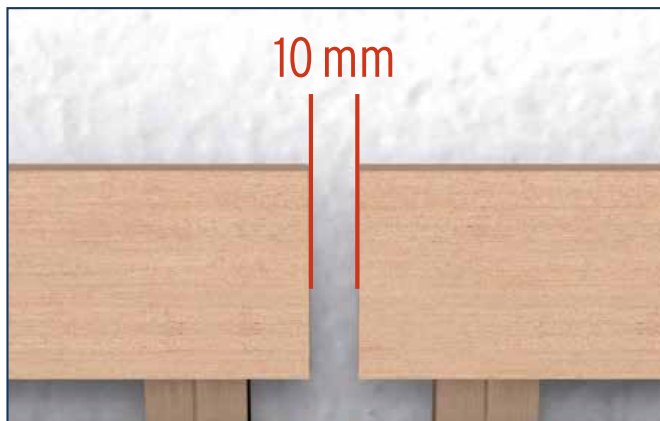
The screws may be mounted flush to the surface or countersunk. At the process of countersinking, ripping of the surface fibre or ingress of moisture will not occur. Please use stainless steel screws (A2) suitable for outdoor areas.

Notice:

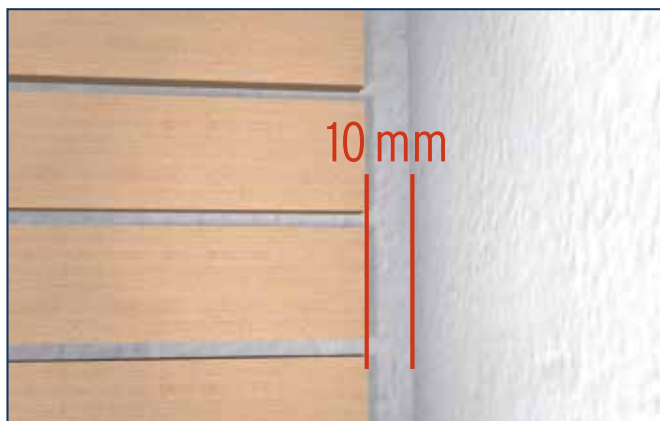
Gercona product range provides terrace construction screws 5.5 x 40 mm (A2). These screws are reinforced at the shaft enabling it to absorb higher shear stress.

We recommend the use of these screws.

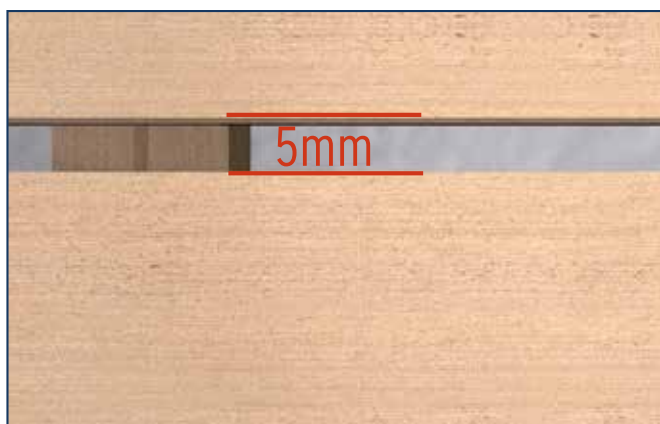
5. Distances between profiles – expansion joints



The expansion joint should be 10 mm with frontal profile joints.

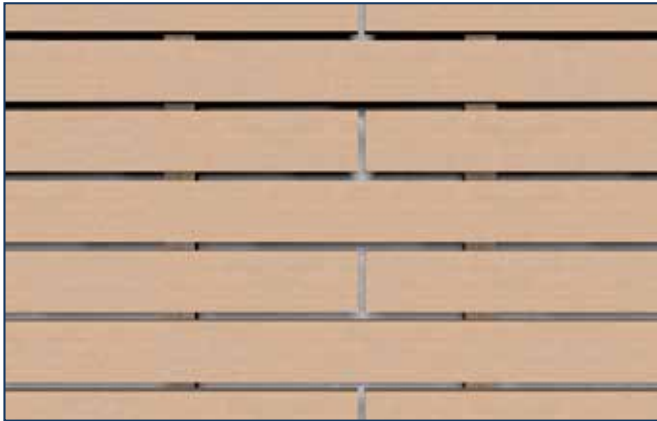


When adjacent to another building, an expansion joint of 10 mm is required.



A distance of at least 5 mm has to be kept between the profiles in longitudinal direction.

6. Joint pattern



We recommend the formation of staggered joints (ship's deck pattern). In this case the lining-up of the joints can be accomplished more neatly and the mounting tolerances are less visible.



In the case of end-to-end joints, we recommend covering the joint. This can be achieved with customary aluminium T-rails. Otherwise, varying changes in length could lead to a slightly irregular joint pattern.



7. Corner solutions

Corners can be designed similar to wooden facades. Thermal expansion always has to be considered when calculating distances.



open mitre joint



open straight joint



open corner with standard aluminium end plate

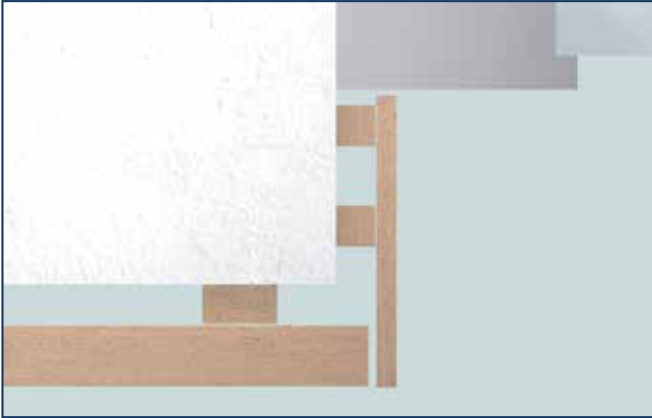


corner end with angle profile ANP 4040

Notice:

When selecting the covering and the corner end, please consider that the free expansion of profiles made of Resysta may not be constrained. Ingress of moisture into the substructure has to be implicitly avoided. The design of the interior corner has to allow for profiles made of Resysta to freely expand and avoid ingress of moisture.

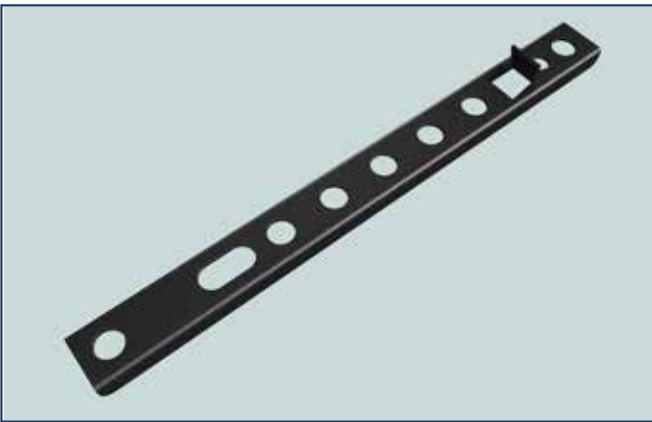
8. Joining



Joining to roof edges, window lintels, window reveals, window parapet etc. has to be carried out in a manner that avoids ingress of water into the substructure and allows for controlled water drainage. For this purpose, the use of aluminium Z-profiles is recommended.

Different Resysta profiles can also be utilized for connections, e.g. window reveals with UPB-Boards.

9. Installation of profiles FPH 7020, FPH 7518 and FPHR 10520 with facade clip FCS 14517



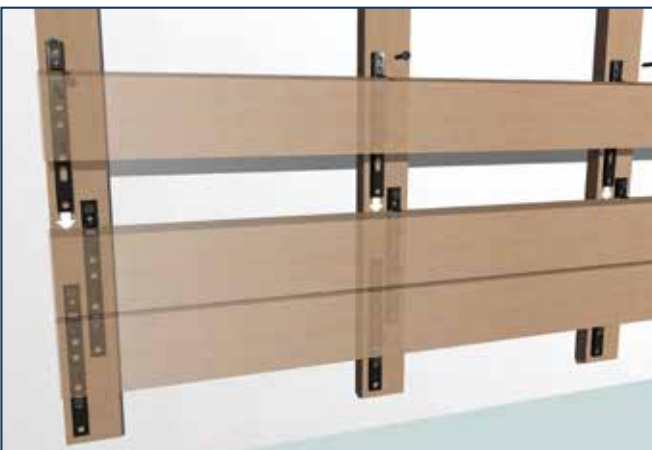
Technical data:

- Length: 145 mm
- Width: 15 mm
- Height: 5,5 mm
- Coated metal clip
- Resistant against heat, frost and UV



Installation of clips:

- The clip is attached to the profile with two screws. Screws: 4.2 x 17 mm
- The outer holes of the clips are used for the fixation of the clip.



Installation on the substructure:

- The first clip is attached to the substructure with two screws. Screw: 4,5 x 29 mm (dark coated).
- The other clips are screwed with one screw to the substructure on the upside. Screw: 4,5 x 29 mm
- As shown in the illustration, the clips are attached laterally staggered.
- The joint between the profiles can be varied as desired. For a sufficient ventilation we recommend a joint of at least 5 mm.
- The distance between end of profile and clip to profile end may not exceed 50 mm.

10. Edges

Ingress of moisture at the edges cannot occur. We, however, recommend rounding off the edges with sand paper prior to colour treatment.

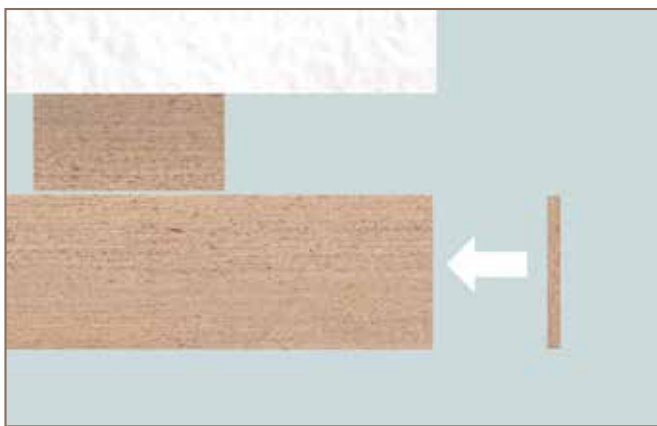
The edges of profiles made of Resysta, are customarily slightly ground as standard.

11. Cutting edges

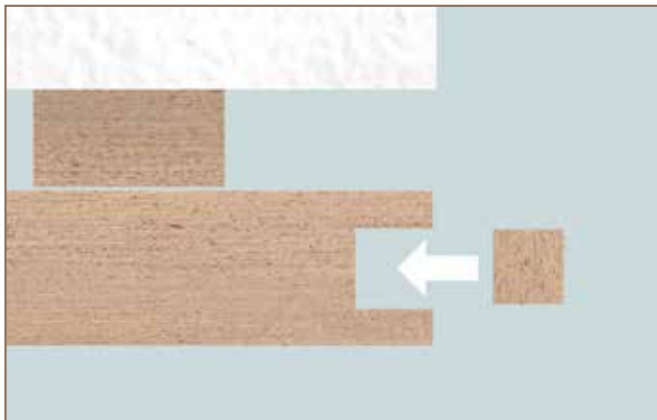
Cutting edges should be rounded off with sand paper (refer to „Edges“). This should be done in any case prior to colour treatment.

12. Closing ends of hollow profiles

To avoid heavy weight, many profiles made of Resysta were produced as hollow chamber profiles. There are numerous possibilities to conceal or close these.



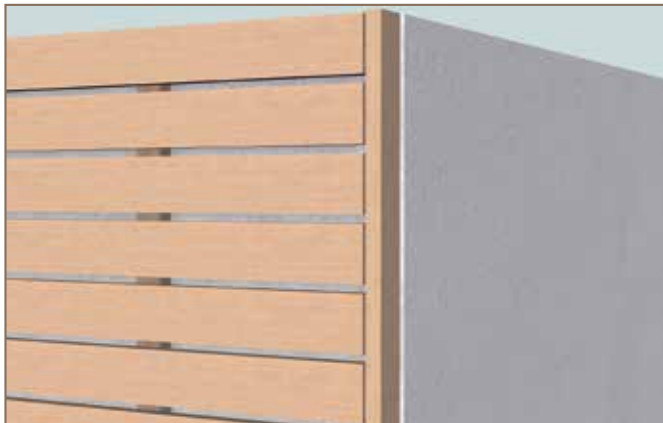
closing the ends with small plate made of UPB-Boards (bonding).



closing the ends with end plate (prior milling of a groove is required).



covering the hollow chamber with end plate.



covering the hollow chamber with end plate (3D-image).



concealing the hollow chamber by means of bevel cut.

13. Frontal area protection

Profiles made of Resysta do not feature capillary action. Therefore a frontal area protection with color is not strictly necessary. Paint coating may however be done for visual reasons.

14. Driving rain protection

Thanks to the high material density, no adverse effects are caused by driving rain.

15. Splash water protection

Thanks to the high durability (resistance) of profiles made of Resysta a material impairment does not occur. Increased soiling can, however, be expected and can result in staining. We recommend treating profiles made of Resysta with sealer (RFS) in the affected area. It is absolutely required to protect the substructure against ingress of moisture.

16. Completion

Drilled holes, dowel holes and cut surfaces occurring after mounting should be glazed afterwards. By applying the glaze with a cloth, scratches and damages can be refinished.

IMPORTANT INFORMATION

- Profiles made of Resysta are not approved by building authorities. Profiles made of Resysta are not suitable for supporting or constructional purposes. Local building codes have to be observed accordingly.
- Resysta is a relatively recent construction material. Basic constructions, fixing material, etc. have to be conducted in accordance with the general state of technical knowledge and adjusted to the respective application area and purpose.
- Check material quality prior to installation.
In case of complaints, the material may not be installed.
- Please adhere to all current standards and regulations as well as VOB.
- Illustrations in this guideline are no technical drawings and display no technical solutions.
- Attention: Do not burn material!
In case of fire harmful chlorine gases and other degradation products can be released.
- Remnants of profiles and unmixed waste can be delivered to collection points as part of the Resysta recycling cycle. Please send requests for details about the concept and the principle to team@gercona.com



TECHNICAL DATA

Density	ASTM D2395:2002	approx. 1,46 g/cm ³
Coefficient of Linear Thermal Expansion	ASTM D696	3,6 x 10(-5) m/mC
Water Absorption and Air Humidity Behaviour	ASTM D1037:2006a	none or very low water absorption (only surface wetting)
Weathering and UV Resistance	QUV Test	Resysta surfaces treated with glaze show extremely high resistance
Skid Resistance	DIN 51097	C Rating (highest rating)
Fire Behaviour (German Standard)	EN ISO 11925-2	A Rating (flame propagation 25, smoke emission 450)
Fire Behaviour (US Standard)	NFPA	Klasse A (Flammenausbreitung 25, Rauchentwicklung 450)
Fire Behaviour (British Standard)	BS 476 Teil 6 & 7	Rating 1
Durability (Resistance to Wood-Destructive Fungi)	DINV ENV 12038:2002	the material has not been affected, highest durability – Class 1
Emission	DIN EB ISO 9001/14001	passed
Brinell Hardness (HB)	EN 1534	81,1 N/mm ²
Friction Coefficient μ untreated	EN 13893	0,46
Friction Coefficient μ with 2K	EN 13894	0,52
Screw Withdrawal Resistance	EN 320.2011-07	5777 N
Heat conductivity (λ)	EN 12664	0,199 W/(mK)
Water Vapour Permeability	DIN EN ISO 12572	$\mu=1300 \rightarrow$ sd 7,22m diffusion inhibiting
Bending Strength	ISO 178	46 N/mm ²
Bending modulus	ISO 178	3850 N/mm ²
Tensile Modulus	ISO 527	21,8 N/mm ²
Tensile modulus	ISO 527	2340 N/mm ²
Shearing Strength	EN 392	16,8 N/mm ²
Resistance to Mould Fungal Decay	CEN/TS 15083-2	The material features almost no mass loss, highest durability classification 1 (very durable)

