



INSTALLATION REFERENCES

RESYSTA FACADE

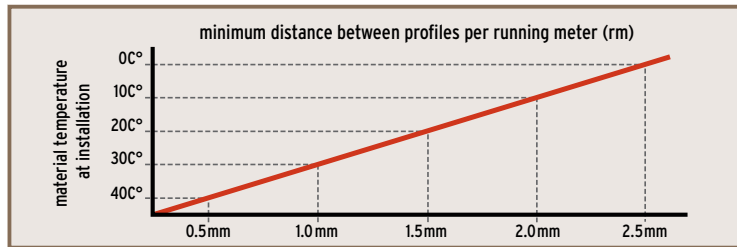




1. Basics
2. Product Range
3. General Information
4. Pre-Treatment
5. Technical References
6. Completion
7. Important Information
8. Technical Data

1. Basics

A The dimensional change 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. However, screw connections prevent thermal expansion. This means that normal, general thermal expansion of the material only occurs at the free ends.



- B 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. 0.4mm per running meter.
- C Resysta has a high vapor diffusion resistance. Please consider at installation.
- D Resysta has the flammability classification B2 (normal flammable according to DIN4102), with additives, B1 is achievable. For projects requiring B1 classification please inquire separately for profiles. Facade profiles are construction materials which have to fulfill the requirements of the state building code. Further information may be obtained at your responsible building authority and fire-prevention department respectively.
- E Cut-off pieces and/or abrasive dust have to be disposed separately. Please comply with regulations of your competent waste management. You may under no circumstances burn Resysta yourself.

Wood Preservation – Properties in Comparison to Wood

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

- discoloring of the surface due to chemical decomposition and wash off 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

Resysta is an innovative material consisting of polymers and rice husks and does not possess typical wood characteristics like graying, cracking and splintering. Owing to the special properties of Resysta the basic installation technique merely differs in some aspects from the installation of other products.

STORAGE

- please store Resysta products 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.

2. Product Range*

FPHR 6520



material color width x height	Resysta natural 65 x 20 mm
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FPHR 10520



material color width x height	Resysta natural 105 x 20 mm
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FPH 7020



material color width x height	Resysta natural 70 x 20 mm
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CP 140



material color width x height	Resysta natural 173 x 13 mm
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WCWA 300 x 33



material color width x height	Resysta natural 300 x 33 mm
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* Additional profiles available,
which can e.g. be used as runners
or for end pieces.

NOTICE: A separate installation guide with all
corresponding elements is available.

3. General Information

The installation should be carried out by a skilled specialist.

Standard woodworking tools can be used for the material processing.

SAWING: 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: Resysta should be grinded 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 employed for the removal of dirt.

DRILLING: Drilling can also be done with customary standard wood drills.

Bonding

Resysta International GmbH provides adhesives and bonding agents for the bonding of surface profiles with floor, wall and ceiling. Resysta may be glued with standard PU-adhesive or a suitable plastic adhesive.

Varnishing

Resysta can be treated with Resysta glazes. You will find especially developed and carefully matched color shades in Resysta Color Concept. Please only use the colors and sealer especially developed for Resysta.

Cleaning and Care

Resysta is extremely easy to maintain. Please refer to cleaning and maintenance details specified in the separate information sheet or at www.resysta.com.

4. Pre-Treatment

Application of the color-glaze (FVG)

To obtain a uniform and optimal color result, the glaze should be applied at consistent basic conditions. We therefore recommend to apply the glaze before installation on each profile individually. Application temperature approx. 5° - 25°, relative air humidity approx. 50 - 60%.



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.

Application of the sealer (RFS)

To achieve increased protection against soiling and weathering we generally recommend application of the sealer. The colorless sealer may be applied to Resysta untreated and Resysta glazed material. For further details please refer to data sheet „glazes and sealers“ at www.resysta.com.

Surface treatment

Reasons for recommended surface treatment of Resysta:

- color design
- protection against soiling
- protection against brightening of color

5. Technical References

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 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

For the substructure, Resysta International GmbH provides special profiles, which may also be employed. For more details please refer to www.resysta.com. We explicitly recommend the use of the Resysta substructures because of their durability and water resistance.

2. Rear Ventilation



Due to Resysta's high diffusion resistance, 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.






5. Technical References

3. Fixing Distances



Recommended maximum fixing distances are dependant on the type of profile. These are defined individually for each profile (please refer to data sheet „profiles“).

The determined distances ensure 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.

RESYSTA PROFILE		MAXIMUM CENTER DISTANCE at upright installation
FPHR 6520		625 mm
FPHR 10520		625 mm
FPH 7020		625 mm
CP 140		625 mm
WCWA		700 mm

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.

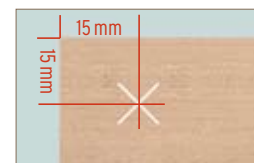
When screw mounting into the material, the screw depth should be approx. 3 times the diameter of the screw ($3 \times \varnothing$). Resysta should be pre-drilled with 0.7 - 0.8 times the screw diameter ($0.7 - 0.8 \times \varnothing$).



With Resysta profiles, which are more than 80 mm wide, 2 screws / fastener 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.

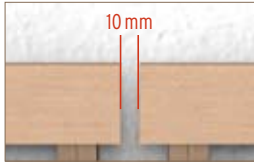
The screws may be mounted flush to the surface or countersunk. At the process of countersinking, ripping of the surface fiber or ingress of moisture will not occur. Please use stainless steel screws (A2) suitable for outdoor areas.

NOTICE:

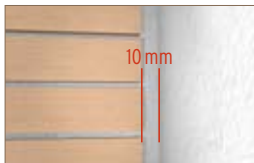
The Resysta International GmbH product range provides terrace construction screws 5.5 x 40 mm (A2). This screws are reinforced at the shaft enabling it to absorb higher shear stress. We recommend the use of these screws.

5. Technical References

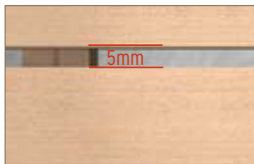
5. Distances between Profiles – Expansion Joints



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.



5. Technical References

7. Corner Solutions

Corners can be designed similar to wooden facades.

Thermal expansion always has to be considered when calculating distances.



open miter joint



open straight joint



open corner with standard aluminium end plate



corner end with Resysta ANP 5050

NOTICE:

When selecting the covering and the corner end, please consider that the free expansion 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 Resysta to freely expand and avoid ingress of moisture.

8. Joining

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



Different Resysta profiles can also be utilized for connections, e.g. window reveals with FP 200/5.

9. Edges

Ingress of moisture at the edges cannot occur. We, however, recommend rounding off the edges with sand paper prior to color treatment. The edges of Resysta profiles are customarily slightly grinded as standard.

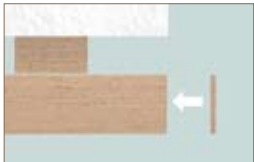
10. Cutting Edges

Cutting edges should be rounded off with sand paper (refer to „Edges“). This should be done on any account prior to color treatment.

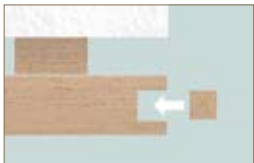
5. Technical References

11. Closing ends with extruded profiles

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



closing the ends with 2.5 mm Resysta veneer (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

12. Frontal area protection

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

13. Driving rain protection

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

14. Splash water protection

Thanks to the high durability (resistance) of Resysta a material impairment does not occur. Increased soiling can, however, be expected and can result in staining. We recommend treating Resysta with sealer (RFS) in the affected area.

It is absolutely required to protect the substructure against ingress of moisture.

6. 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.

7. Important Information

- ! Resysta profiles are not approved by building authorities.
- ! Resysta profiles are not suitable for supporting or constructional purposes.
- Local building codes have to be observed accordingly.

- ! Resysta is a new 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 mechanical drawings and display no technical solutions.

8. Technical Data

Density	ASTM D2395:2002	approx.1.46 kg/m ³
Coefficient of Linear Thermal Expansion	ASTM D696	3.6x10(-5)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	B2, normal flammability (by adding flame retardants, a higher rating of B1 can be reached)
Fire Behaviour (US Standard)	NFPA	A Rating (flame propagation 25, smoke emission 450)
Fire Behaviour (British Standard)	BS 476 Part 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



The Future Formula is Called Resysta.

Raw materials used:



approx. 60% rice husk + approx. 22% rock salt + approx. 18% mineral oil = Resysta

All specifications provided are subject to our installation guidelines and appropriate use at outdoor exposure.

The installation guide may be adapted to technical progress without prior notice.

The current version can be downloaded at www.resysta.com.

Subject to alterations. Slight deviations in color, photos and graphics could occur due to printing process.

www.resysta.com