



Create New Worlds

Shape, color, material - they all convey emotions, tell stories, inspire new ideas. And they all give our buildings and homes character. With this brochure we want to therefore provide an overview of the creative and technical component of the ESS EcoStyleScreen panel for various applications. If you have questions that are not answered in this brochure, please call our sales or application engineering via www.ecostylescreen.de. We're here to help.

Product

ESS EcoStyleScreen is the first large-format design panel made of Resysta®, an innovative hybrid material based on rice husk and a thermoplastic material. The extruded sheets are obtained by processing a wood like appearance and feel. ESS EcoStyleScreen is extremely resistant to external influences such as sun, rain, snow or salt water and protects, as an alternative to tropical timber, valuable resources. Unlike comparable wood or wood-based products, the material does not swell when exposed to water and is UV resistant. ESS EcoStyleScreen is predominantly based on natural raw materials. Due to the special production and composition of ESS can therefore lead to smaller air pockets. Even when the individual panel variations in the color of the surface conditions are possible. However, this does not affect the quality of the product.

Characteristics

- Weatherproof
- Lightfast
- Suitable for many indoor and outdoor applications
- Decorative
- Self-supporting
- Rigid
- Easy to assemble
- Easy to clean

Professional advice

With our services you can use our products more effectively. The benefit of free architect visits and consulting of our comprehensive system solutions. This is also true if you have any questions about the contents in this document as well as designs and technology.

Quality

ESS is of high-quality construction, which is particularly used as a design element for facades. Facings and wall constructions for indoor and outdoor. The very high weather resistance in combination with their natural wood look makes it suitable for all applications.

Surface

ESS EcoStyleScreen is optionally supplied in all designs on one or both sides with a natural texture, imitation wood and finished sealed surface. The panel has no capillary action. Penetration of moisture at the edges is not a concern. Edge or face protection with stain is not necessary. To make indoor or permanently visible backs uniform, it is possible to produce the ESS panels with a white (rear) face.

Format (production size): 610 x 1220 mm (609.6 x 1219.2 mm) = 0.74 m²

The format is 2' x 4' panels.

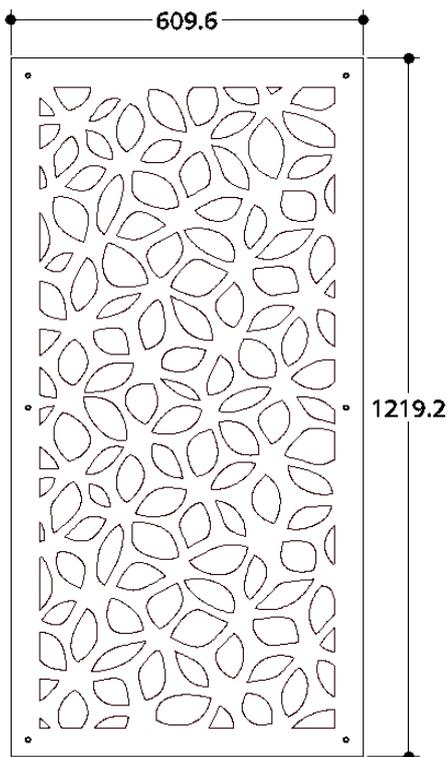
One thickness with one-sided and double-sided finish: 8 mm

Tolerances:

Format ± 0.8 mm

Thickness ± 0.6 mm

Larger sizes and thicknesses on request in standard quality.



Physical data

Density	1.490 g / cm ³	DIN EN ISO 1183
Yield stress	26 MPa	DIN EN ISO 527
Elongation at break	2%	DIN EN ISO 527
Train Modulus 3580	MPa	DIN EN ISO 527
Flexural modulus	of 3,800 MPa	DIN EN ISO 178
Flexural strength	46 MPa	DIN EN ISO 178
Shore hardness	75D (15s)	DIN EN ISO 868
Linear thermal expansion	4.3 x 10 ⁻⁵ K ⁻¹	ISO 11359-2

Vicat (B)	74 ° C	DIN EN ISO 306
Fire behavior	B2	DIN 4102
(Self-assessment without test certificate)	B1 on request	DIN 4102
	V-0 from 1 mm	UL 94

This data is indicative and may vary depending on processing and testing. In general, it is averages of measurements on extruded sheets with different thickness. The suitability of materials for a specific purpose must be examined by the processor or user. The technical characteristics are only a planning aid. In particular, they do not represent assured characteristics.

Sustainability and Environment

ESS EcoStyle Screen production cycles are largely closed, production residues are recycled in the manufacturing process or used for energy recovery. The used Resysta material already meets the technical and environmental requirements of the future. The fiber reinforced hybrid material is produced with about 60% of rice husks, to about 22% of rock salt and about 18% of mineral oil.

With a special process the surface resembles tropical timber. Thus ESS helps reduce the consequences of deforestation, thus ensuring a good feeling even after years of use.

Disposal

Leftovers, chips or sawdust from ESS EcoStyleScreen panels should, like other thermo-plastics also be disposed of properly. Basically, the disposal in question, country-specific laws and regulations are always observed.

Danger:

Do not burn ESS boards!

In case of fire harmful chlorine gases and other degradation products can be released.

Guidelines for Handling

Transport

To avoid damage to the high-quality material at the edges and surfaces, you must handle with care. Despite the excellent surface hardness and the protective finish, the weight of over stacking ESS can cause damage. Therefore, contact between the panels must be avoided. ESS must be secured against slippage during transport and loading and unloading of the panels. Avoid sliding across the face of panels when lifting.

Storage

Storage should in principle take place indoors without moisture, temperature changes and where direct sunlight is not present. Packaging tapes should not make direct contact to stained face. When repackaging avoid using steel banding straps. Avoid any hot surfaces when possible. Proper ventilation of the material must be ensured. To avoid mildew, the material should not be stored in plastic film. The panel should be stored on a hard even surface. Individual sheets should be stored flat. The panels must lie completely flat. Incorrect storage can cause permanent damage.

Assembly

During the assembly and installation of ESS EcoStyleScreen panels personal protective equipment must be used to perform the work in a safe environment.

Safety precautions

This is just a recommended list of personal protective equipment (PPE). The requirement for each activity of the occupational safety protective equipment (gloves, dust mask, eye glasses) are to be used.

- Dust

When sanding or cutting ESS panels it can cause dust. For sufficient respiratory protection always use a disposable dust mask or suitable dust collection system.

- Hearing protection

When milling or sanding ESS panels always use proper hearing protection.

- Gloves

ESS panel edges are sharp. There is a risk of injury. It has been proven useful when handling freshly cut ESS panels to use gloves of Protection category II.

- Safety goggles

When cutting or milling ESS panels safety glasses or other type of eye protection should be worn.

Cleaning

Please note that foreign substances (Machine oil, grease, glue residues, sunscreen creams, etc.), on the surface of the ESS EcoStyleScreen be removed immediately during and after install of panels. For correct cleaning details, refer to page. 8

Processing recommendations

Cutting

ESS EcoStyleScreen panels can be cut in both the longitudinal and transverse directions with all standard saws. For individual sections also fine-toothed hand saws are suitable. The use of carbide saw blades improves cutting performance and quality and increases the service life of the saw blade. For straight cuts with circular saws we recommend using guide bar to improve quality of cut.

Milling

For cutting all common milling machines that are designed for high speeds, is suitable. Advantageously, working with high cutting speed, low cutting depth.

Dressing and edge processing

Dressing the edges takes place with the usual tools. A manual handling with files and electrical hand planning is also possible. For breaking of edges fine filing, planning, sandpaper or scraping can be used with success. Hand routers can be used for special tasks with carbide blades. Be sure to protect the ESS EcoStyleScreen panel surface when in contact with hand router. Shavings must be removed. We recommend carbide-tipped cutters, which are also available with inserts. For a better tool utilization height-adjustable milling tools are recommended.

Drilling

ESS EcoStyleScreen panels can be drilled with standard drill bits. We recommend the use of relief-cutting and small twist angles.

Screw

We recommend that all screw diameter pre-drilled accordingly. To avoid breaking of material at the border and edge areas, screws should have a minimum distance of 20 mm to the edge. Basically, the use of flat-head screws

is recommended. When using countersunk screws first drill out the hole with a conical miller that no tensions occur in the material.

Rivets / nails

We do not recommend using rivets or nails on the ESS EcoStyleScreen panels. This can lead to stress cracks and breakage of the panels. Even by pre-drilling cracks cannot be completely avoided. Depending on the application, we recommend appropriate preliminary tests.

Attachment

The attachment points of the ESS EcoStyleScreen panels are already set with factory holes. The panels must be completely supported on the substructure. The local building regulations must be observed.

Substructure

The substructure must comply with the requirements of national standards and is performed according to the static requirements and assemble the manufacturer of substructure specifications. For the substructure various materials such as wood, aluminum or Resysta can be used. The substructure Resysta offers special profiles. Due to the comparable material properties, particularly water resistance, we recommend this for use. The substructure is basically composed of horizontal and vertical support profiles, which are mounted on the wall by means of screws and / or dowel. The substructure is to be protected regardless of the material or system used to prevent corrosion. Anchoring elements for mounting on masonry / concrete and the installation of the panels must be dimensioned during local wind loads and static requirements. Documents are adopted before-the-client. Unevenness of the respective subsoil must be balanced by the substructure. The different sub-structure material characteristics must be taken into account and you may have to consider fix and gliding points for mounting the panels. These dimensional changes of substructure and cladding material can be opposite. Therefore it must be ensured during assembly on the expansion clearance necessarily.

Fastener

Basically only fasteners may be used of non-corrosive material. We recommend countersunk screws with 5 mm (about 0.19 inches) thread diameter. The drill diameter in ESS EcoStyleScreen panels be made with 6,0 mm. The fastener is set so that the panel can move. Screws should not be overtightened. Screws should be placed centered to the drill hole.

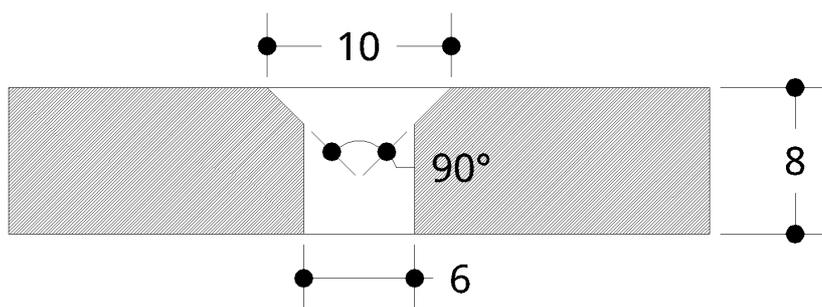


Figure 1: attachment point prepared factory

Edge distances

The edge distances are vital importance for reasons of stability and flatness. To accommodate the dimensional changes, the panel joints must be made at least 5 mm apart. If there is no separate structural analysis required we recommend for wooden subframe material cross-sectional dimensions of minimum (width x height) 50 x 30 mm or 60 x 40 mm. For closed butt joints you can also use subframe material with 100 mm width. The spacing

of the screw to the plate edge must be at least 20 mm. The screws can be screwed in flush with the surface or recessed.

General use and safety instructions

Cleaning

Clean the surface simply with pure hot water and to use a soft sponge - DO NOT scrub (not "green" side of the sponge use), a soft cloth or a soft brush (as nylon brush).

Impurities thus can not be removed, use normal household cleaners without abrasives. Scouring with with a scrubbing sponge or similar hard materials (scratch brush etc.) we do not recommend. Caution: avoid scratches, and use of plastic or wooden spatula. Always completely remove cleaning detergent to avoid streaking. Finally, rinse with clean water and dry. Wipe with an absorbent cloth completely dry the surface. Please ensure that aggressive cleaning agents (Acids, for example, or chlorine) are not used. This could damage the surface of the material.

Planning and construction

ESS EcoStyleScreen is a new product and not for self-supporting constructions. Basic construction must be under general state of the art and adjusted to suit the individual needs and purpose. As for ESS EcoStyleScreen so far there is no official approval, you must contact a competent authority requiring approved applications. Local building regulations are to be observed accordingly. Before installation check material quality. In the event of complaints affected panels must not be installed.

Disclaimer

The information provided in this document is for general information purposes only. Not all systems that are mentioned and shown in this document are appropriate or suitable for all applications and regions. The illustrations in this document are not technical drawings and show details. All customers and third parties are obliged to inform themselves in detail about ESS EcoStyleScreen products and their suitability for specific applications. We recommend, moreover, express that you and all other users of this document seek independent professional advice as to compliance with local planning and application requirements, applicable laws, regulations, standards, guidelines and testing standards. In this respect, we assume no liability.

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