

BUILDING A BREAKTHROUGH

Technical specifications for tree-free
building with HDG Resysta Panels

HDG Resysta Panels



LOOKS, FEELS, AND IS JUST AS EASY TO WORK WITH AS WOOD — BUT OUTPERFORMS IT IN EVERY WAY:

- 100% water-resistant
- 100% recyclable
- Mold-, pest- and UV-resistant
- Guaranteed not to splinter, rot or crack
- Suitable indoors and out
- Thermoformable
- As easy to work with as wood

Contents

| | |
|--------------------------------------|----|
| Build Better with HDG Resysta Panels | 4 |
| Material Overview | 6 |
| General Information Mechanical | 8 |
| Processing | 11 |
| Thermoforming | 12 |
| Fastening | 14 |
| Surface Finish | 15 |
| Additional Applications | 16 |
| • Outdoor | 16 |
| • Interior | 17 |
| • Digital Printing | 17 |
| • Embossing | 17 |
| Additional Information | 18 |
| Guarantee | 19 |

The team at HDG is here to help.

For additional assistance please email us at sales@hdgbuildingmaterials.com or call us at 503.360.9551

Build Better with HDG Resysta Panels

NATURAL BEAUTY

- Warm look and feel of wood
- Natural-looking grain
- Barefoot-friendly, low heat retention
- Wide range of finishing options: sand, stain, oil, glaze, paint, digital printing

SUSTAINABILITY

- Made in the U.S.A. Fewer emissions from transporting long distances
- 100% tree-free
- Upcycled natural fibers from discarded rice hulls, a rapidly renewable resource
- Free of phenol, formaldehyde and adhesives
- Zero-waste manufacturing
- 100% recyclable

TECHNICAL BENEFITS

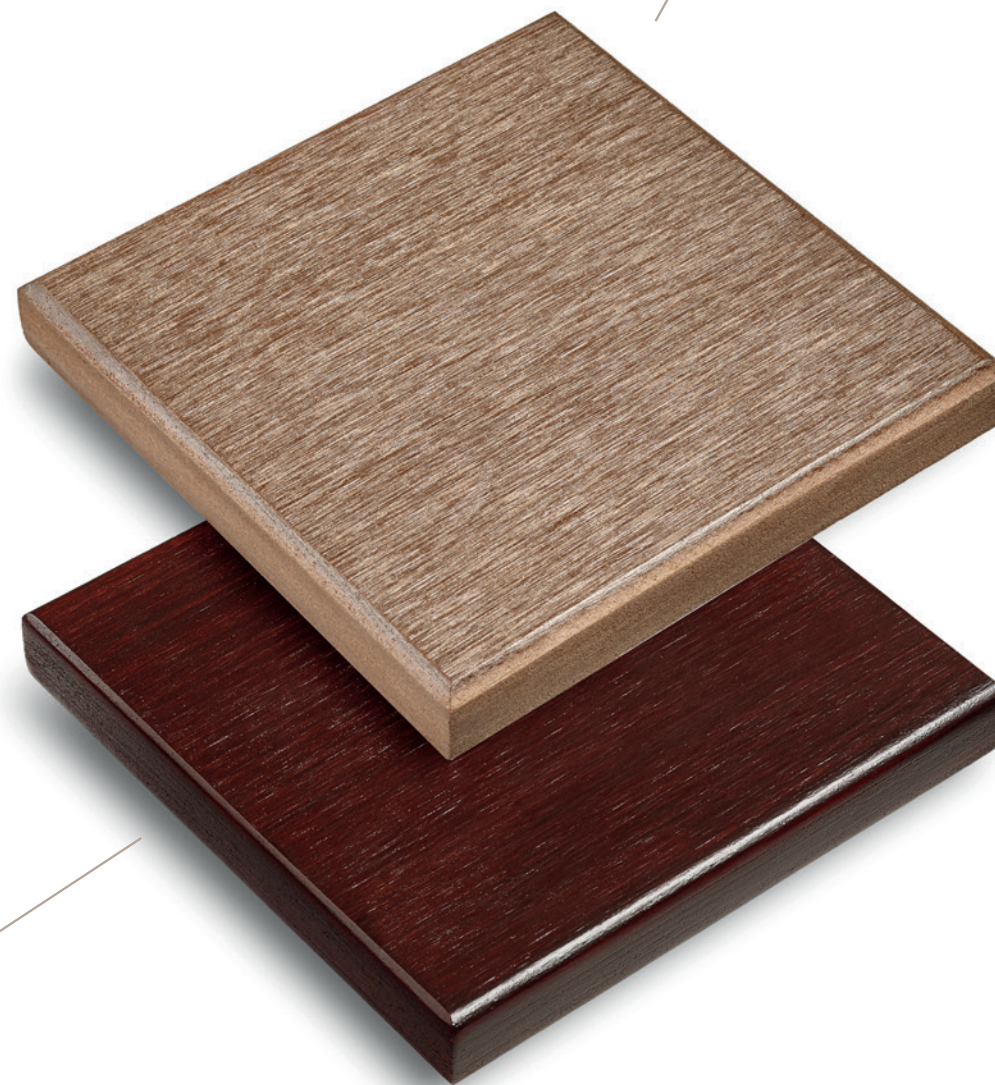
- Uniform texture and finish-ready edge throughout
- Can be processed with common woodworking tools
- Accepts screws and nails easily with a flush finish
- Flexible and thermoformable
- Perfect for curved applications
- Easy to glue and bond
- Lightweight and easy to handle and install

UNMATCHED DURABILITY

- 100% resistant to water, weather, pests and rot
- High UV- and fire-resistance
- No splintering, cracking or warping
- No special maintenance or cleaning methods needed
- Industry-leading material guarantee

CUSTOMIZABLE SPECS

- 4' wide x 8' length sheets standard, up to 20'
- Thickness: 1/4", 3/8", 1/2", 5/8", 3/4", 1"
- Other dimensions can be produced for custom orders



Material Overview

HDG Resysta Panels are a new material, suited for a wide range of applications. Produced without touching a single tree, HDG Resysta Panels rely on upcycled rice hulls. Rice hulls provide incredible resistance to water, weather, rot and pests along with great beauty and texture. Resysta is 100% water-resistant — traditional maintenance and replacement associated with wood is not necessary.

RESPONSIBLE. SUSTAINABLE. LOCAL.

We use discarded rice hulls that would otherwise go to landfills, and we embrace a zero-waste manufacturing process.

HDG Resysta Panels are free of phenolic plasticizers such as bisphenol A, formaldehyde, and adhesives. Resysta is 100% recyclable — post-industrial and post-consumer product can be used to form new products at our manufacturing facility in Mississippi.

INSTALLERS LOVE HDG Resysta Panels

- Use regular woodworking tools — no special equipment or techniques
- Resysta has incredible oil, stain and coatings adhesion. Treat the surface just as you would treat wood
- Significantly less thermal expansion and contraction force of traditional wood alternatives and total hydroscopic stability
- No special training, tools, clips or fasteners
- No harmful by-products or emissions are created during installation



WARMTH AND BEAUTY OF WOOD

- Low maintenance
- 100% water-resistant
- Infinite finishing options including staining, oiling, lacquering, painting, digital printing and more

UNMATCHED DURABILITY

- Consistent texture, water-resistant, UV-resistant
- Low expansion and contraction force
- Will not rot, crack, splinter or swell
- Resistant to mildew, fungi and pests
- Sustainable and responsible

EASY TO WORK WITH

- Compatible with all woodworking tools
- Lightweight
- Homogeneous edge
- No need for subsequent veneer or banding
- Works with common patching / filling materials
- Bonding by means of a wide variety of glues
- Thermoformable

General Information

THERMAL PROPERTIES

- Similar to wood, during installation, keep HDG Resysta Panels at a consistent temperature, acclimated to the environment
- Acclimate HDG Resysta Panels to the temperature they will be installed at for at least one hour, two is best, before cutting or processing

FASTENING AND CONSTRUCTION

- There are no special requirements for fastening
- HDG Resysta Panels accept screws and nails easily with a flush finish
- Screws and / or ring shank nails are preferred
- Select the appropriate screw size and tighten slowly
- HDG Resysta Panels are easy to glue and bond
- Choose the mounting distances depending on the board thickness and substrate
- Fasten HDG Resysta Panels between 3/8" and 5/8" from the edge of the boards
- Panels are available in varying thicknesses: 1/4", 3/8", 1/2", 5/8", 3/4", 1"
- Support HDG Resysta Panels at various thicknesses depending on application and environment

HDG Resysta Panel technology greatly reduces the thermal expansion force compared to conventional plastic sheets goods. HDG Resysta Panels can be used with traditional nails and screws to keep thermal expansion to a minimum.



SIDING AND CLADDING

- To avoid moisture and overheating in buildings, provide ventilation between siding and substrate. Follow code requirements for air gaps and drainage planes
- Class A or B fire ratings are available
- Ensure fire code and flammability requirements meet required code

HOMOGENEOUS EDGE CROSS SECTION

- The edges do not have to be laminated because of the homogeneous cross-section
- The ends and edges do not require sealing or special treatment as the material will not absorb moisture and does not swell in the presence of water

Mechanical Processing



CUTTING

Saws used in traditional woodworking can be used with HDG Resysta Panels:

- For circular saws, carbide tipped tools are recommended
- Fine tooth blades as well as coarse tooth blades may be used
- Using a fine-tooth blade produces a slightly more uniform finish

DRILLING

Drills used in traditional woodworking can be used with HDG Resysta Panels and without any special adjustments including:

- Standard twist drills for wood (HSS, carbide tipped)
- Hand drill
- Drill press
- CNC drills

You can process HDG Resysta Panels with traditional woodworking tools and machinery.

SANDING

Can be sanded with traditional sandpaper:

- 24 to 60 grit is used to create the grain structure
- Finer grit sandpaper (> 80) to avoid staining and soiling
- Avoid sanding too deeply to protect and retain the surface grain

MILLING

Can be processed with milling and shaping machinery:

- Router
- Shaper
- Milling table machines
- CNC milling
- Four-side processing machine
- Carbide tipped tools are recommended

Collect dust and milling waste separately and **do not burn**.
The collected waste can be recycled. Contact HDG for details.



Thermoforming

With the application of heat, you can bend, mold, and manually shape HDG Resysta Panels. You can also use heat to bond pieces of HDG Resysta Panels together.

THERMOFORMING PROCESS

- Be sure to test a small amount before full application
- Radius will depend on the board thickness. If the radius is too tight, the surface may tear
- Allow sufficient time for heating
- Sufficient heating (approx. 1 - 1.5 min per mm board thickness)
- Temperature approx. 250 °F
- Hold (lock) — time at temperature approx. 3 - 4 mins
- Cooling down (approx. 1 - 1.5 min per mm plate thickness), or faster with water cooling
- Can be thermoformed using a vacuum press
- A mold may be required or helpful for deep shapes

HEAT-SEALING

HDG Resysta Panels can be bonded by heat and compression (heat-sealing). The following short-term heat-sealing properties were determined:

| SPECIFICATIONS: | |
|-----------------------------|---------|
| Heating Element Temperature | 440°F |
| Heating Time | 60s |
| Contact Pressure | 0.2 MPa |
| Joining Pressure | 0.2 MPa |

| | STANDARD | VALUE |
|--|-----------------|-------|
| Short Time Heat Sealing Factor (Tensile Strength) | DVS 2203 Part 2 | 0.68 |
| Short Time Heat-Sealing Factor (Flexural Strength) | DVS 2203 Part 2 | 0.76 |

Fastening

HDG Resysta Panels can be joined with all standard fasteners, such as screws and nails. The appropriate fasteners should be selected in accordance with the application.

SCREWING

- Traditional screws for woodworking can be used and are recommended over nails
- Be sure to consider corrosion resistance with outdoor applications
- Pre-drilling can be helpful for guiding fasteners but is not necessary
- Screw retention depends on the screw
- It is recommended that screws penetrate the substrate

NAILING

- Can be fastened with common nails
- Better results are achieved with nail specific for the application
- Be sure to consider corrosion resistance in exterior applications.
- The nail retention depends on the type of nail (ring shank, smooth).
- Nails should penetrate substrate no less than underconstruction

GLUING

- Can be bonded with a variety of different adhesives to different substrates and materials
- Be sure to run preliminary tests to determine if the adhesives you're considering are fit for purpose
- Gluing works best on sanded surfaces, or surfaces roughened or pretreated with acetone or primer
- Any existing abrasive dust should be removed to improve adhesion

Surface Finish

HDG Resysta Panels can be finished with water-based oils, stains, varnishes, paints and lacquers:

- Choose finishes based on application and environmental needs
- A natural material, surface coatings and color shades may vary
- To refinish simply remove the existing surface and apply a new one
- Finishes can protect against soiling and make cleaning easier



Additional Applications

INTERIOR

- Commercially available water-based products can be used
- Solvent-based products should not be used
- The choice of surface coating product depends on application and requirements

DIGITAL PRINTING

- Suitable for digital printing
- We recommend a white base coat be applied prior to printing
- Adding a clear coat can protect against abrasion, dirt and weathering

EMBOSSING

- Due to the thermoplastic properties, HDG Resysta Panels can be embossed using heated tools
- Embossing tools should be heated between 210- and 270-degrees F





Additional Information

STORAGE / TRANSPORTATION:

- Store sheets and finished goods horizontally and on a flat surface
- When stored on pallets, the pallet must be the same size as the sheets or finished goods as they could deform
- Store and in a cool, dry place
- Avoid direct sunlight

PACKAGING

- Protect from moisture and direct sunlight
- Moisture trapped inside of airtight packaging has the potential to stain materials

DISPOSAL:

- Cutting and sanding debris can be recycled
- Dispose of dust according to local regulations
- Do not burn cuttings or dust

Guarantee

HDG guarantees, for a period of 80 years, that HDG Resysta Panel sheets will not swell, splinter, rot or crack. This applies in addition to existing statutory warranty rights of the end customer towards the respective seller. The guarantee certificate, defining the guarantee conditions in detail, is available by emailing sales@hdgbuildingmaterials.com.

12. LEGAL NOTICE

HDG constructional purposes. In individual cases, approvals must be clarified with the building authority. The local building regulations are to be observed. The construction and fastening have to be executed according to the general state of the art and have to be coordinated with the respective application and purpose. Check material quality prior to installation. Observe all current standards and regulations. The information and data contained herein are deemed to be accurate and have been compiled from reliable sources. HDG makes, neither express nor implicit, assurances of any kind as to the accuracy or completeness of the information and data contained herein. HDG is not liable for claims arising out of the use of, or reliance on the information and data contained herein, regardless of whether the claim refers to incorrect, incomplete or otherwise misleading information and data. They merely serve for evaluation, examination and testing by the user. Due to possible technical changes, it lies within the responsibility of the user to obtain the latest information. This information exclusively describes the safety requirements of the product / products and is based on the current state of our knowledge. It does not constitute an assurance of the described product / products in terms of statutory warranty regulations.



HDG Resysta Panels

It's better building
one tree-free board at a time



Providing Architects and Builders with
Superior Paving, Decking and Pedestal Products.

Commercial | Luxury Residential | Municipal

Extended Team

We can also provide technical consultation and installation training for projects that involve Buzon Pedestals. Please contact us to discuss your particular needs. HDG Building Materials also has a network of experienced installers in many major cities. Please contact us for introductions or referrals.

Sales Representatives

Sales representatives for HDG Building Materials are located in the Pacific Northwest, Southern California, and Iowa.

Outside of those regions? No problem, we are happy to serve. Please contact us at 503.360.9551



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HDG Building Materials is an expert dealer for Resysta Rainscreen, Cladding, and Decking. HDG provides architectural sales and support in North America.

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