



CHABROS
INTERNATIONAL GROUP

Thermo Treated Wood Product Handbook



“A World of Wood and Veneers”

Company Profile

CHABROS, a well known name in veneer supplying, has been in operation since 1960. Chabros has expanded to cover the demand of the entire Middle East area, making it one of the leading suppliers of this region.

The rapidly growing company offers its clients a wide selection of veneers and exotic products, rarely available anywhere else locally. With a database of world manufacturers, it acquires a range of veneers from all continents.

The large well-equipped storage facility ensures clients' needs are met. In addition to the instant availability of the products, the company guarantees one of the fastest and most reliable shipping/forwarding in the region. With its worldwide affiliates, CHABROS is ought to supply and ship any demand within a limited time frame, which to others in the same domain is a difficult challenge.

Being at the forefront of this field, CHABROS has established itself, not only in the U.A.E. market, but in the Middle East area and especially in the Gulf region. With a record of consistent clients, its name has been attached to myriads of projects, ranging from residential and commercial towers to hotels, shopping malls, villas and palaces.

CHABROS, the synonym of dependability and expertise, has shown a rapid growth pattern over the years and plans on further expanding in the near future.



www.chabros.com





“A World of Wood and Veneers”

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Thermo Treated Wood

Thermo Treated Wood is a new generation of wood material and superior to non-treated wood in these ways:

- Increased weather durability by 25 years for outdoor applications.
- Increased dimensional stability (swelling and shrinkage is reduced by 5-15 times).
- Repels moisture at the molecular level (the equilibrium moisture content is lowered by 50-90%).
- Visually, the finished product has an even brown color, consistent to the center of the wood with beautifully accented grain structure.
- 100% chemically free (a "Green" product).

The versatility of Thermo-treated wood makes it a widely used material for both interior and exterior applications, such as siding, roofing, decking, garden furniture, hardwood flooring, doors, windows, fences, musical instruments and highway acoustic barriers. Other applications ideal for Thermo-treated wood are high moisture environments such as, boardwalks, areas around swimming pools, trim of yachts, sinks, bathtubs, floors and facing tiles in bathrooms.

The list is really only limited by a person's imagination. The natural elegance of Thermo-treated wood and its distinguishing features make it quite easy to integrate into the most stunning and innovative designer solutions.

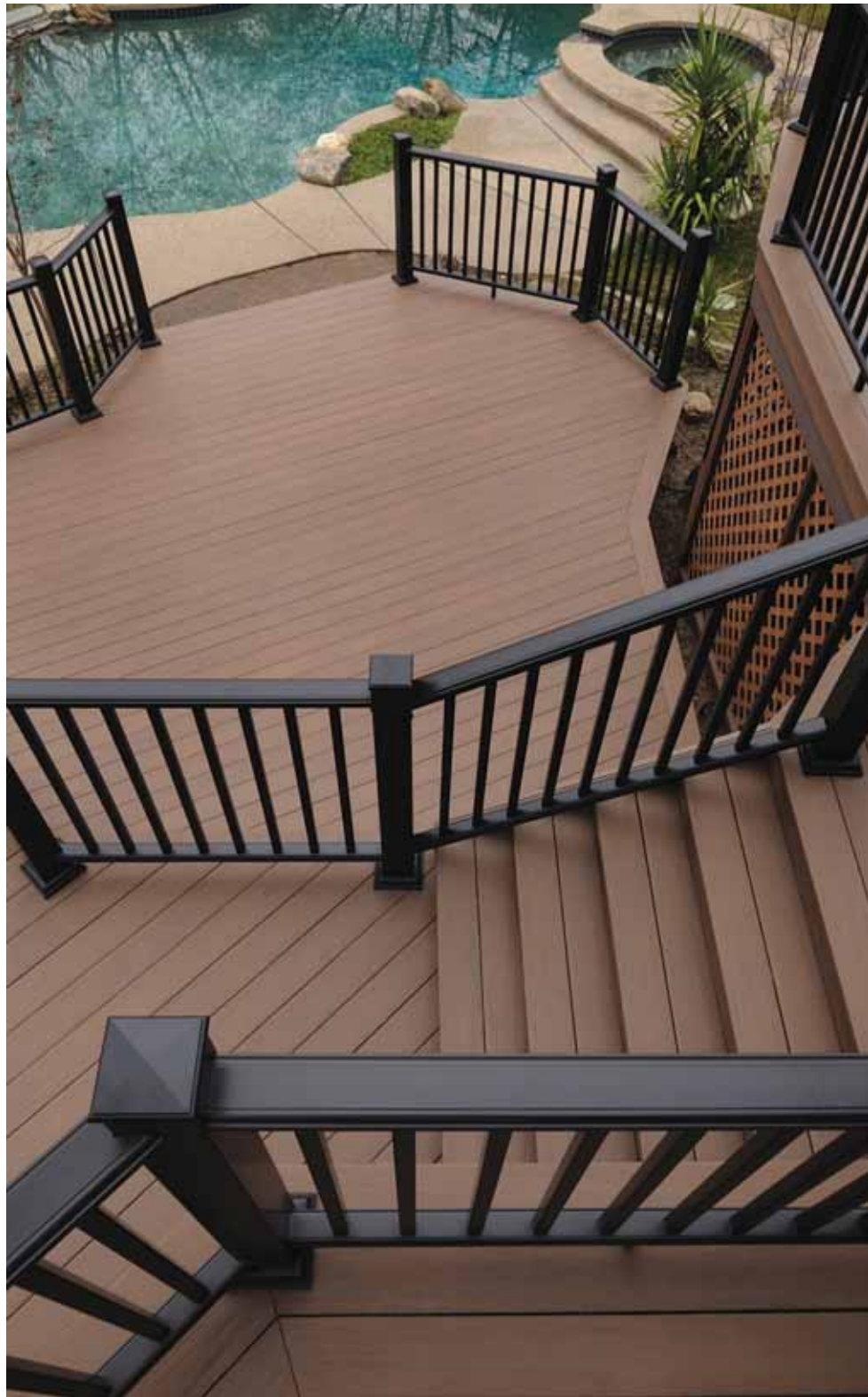
The Thermo-Wood Process

The process can be divided into 3 stages:

- 1- The temperature of the timber is first rapidly raised to ~100°C.
- 2- The timber is intensively heat-treated at a temperature between 185 and 215°C.
- 3- The temperature of the timber is cooled down and its moisture conditions are adjusted.

Two treatments classes are available:

- 1- Thermo-S: Heat treatment 190°C, for internal use.
- 2- Thermo-D: Heat treatment 212°C, for internal and external use.





Thermo-Wood Durability

The reason for thermo-treated wood being so durable and stable is the molecular changes in thermo-treated wood compared to untreated wood. 95% of the polysaccharide are removed during the high-temperature processing, and for this reason, thermo-treated wood is so durable. The thermo-treated wood assumes its minimal size, which substantially reduce moisture related swelling and shrinkage and increase hardness. Wooden floors and furniture for bathrooms and other high-humidity areas are now acceptable.

The thermo-treatment process enhances the woods color, creating an even brown tint that is consistent beyond the surface (the scratches are invisible, which is important to design the high-traffic areas furniture and flooring, as an example). The natural wooden grain is accentuated, giving the appearance of exotic wood or walnut for a fraction of the cost.

Chemicals are never used during the thermo-treatment process, so the material remains environmentally safe. You and your children can walk barefoot across a thermo-treated wooden deck with certainty and piece of mind, that the surface is free from harmful chemicals.

Key Properties

Suitable in situation of the following hazards:

Hazard Class 1

The risk of attack by surface moulds, by staining and wood, destroying fungus in internal joinery.

Hazard Class 2

The risk of accidental wetting or condensation, that exceeds the maximum level (20% m/m), either in the whole or in one part of the component in roof timber, allowing the attack by wood, destroying fungus and disfigurements.

Hazard Class 3

The risk of attack by wood destroying fungus (solid wood can be expected to have moisture content above 20% frequently) in exterior cladding.

Density

Material density is approximately 10% lower than non-treated materials.

Fire Performance

According to EN 13501, the classification for the reaction to fire behavior of building products, thermowood is in reaction to fire class D (products that may lead to a flashover situation within less than 2 minutes).

Thermal properties

Thermal conductivity of thermowood is reduced by 20-25% compared with normal softwoods.

Moisture Content

Thermowood has moisture content of 5-7% when packed at production site. This level will change according to atmosphere conditions.





Thermo Treated Wood Decks and Cladding

Why Thermo-treated?

- Weather durability (25 years)
- “Green” (no chemicals, people friendly)
- Exotic wood appearance and color
- Low maintenance (finish doesn’t crack due to the increased dimension stability of the wood).

New Ideas and Applications

- Decks for pool areas
- Exteriors for buildings
- Acoustic walls
- Footways
- Boardwalks and Beaches
- Decks for waterfront areas (Prohibited with pressure-treated wood)

Compare Thermo-treated Decks and Siding

V.S. Pressure-treated softwood

Thermo-treated wood is “Green” (chemical free). Exotic wood appearance. Lightweight. Safe for contractors and homeowners. Fasteners are not corrosive. Stable in sizes. Lower maintenance. LOWER COST of ownership. Longer life.

V.S. Composite/Plastic Decks and Siding

Thermo-treated is Real wood. Lighter in weight. Does not get extremely hot like composite’s and plastics do in the sun.

V.S. Exotic Wood Decks and Siding

Thermo-treated wood is lower cost. Greater stability. Less weight. Will not accelerate the dulling of tools such as blades and bits. Helps conserve the rainforest!

V.S. Cedar

Thermo-treated wood has better grain structure. Greater stability. Not splitting.







Thermo-Treated Wood Furniture

Why Thermo-Treated?

- 1- Durability (scratches and abrasion are invisible).
- 2- Stable in high humidity areas
- 3- Inexpensive substitution for exotic wood and walnut

New Ideas and Applications

- Furniture for bathrooms
- Sinks / Hot tubs / Baths
- Furniture for kitchens / Basements
- Furniture for yachts
- Counter Tops
- Garden Furniture
- Durable furniture
- Stairs for hotels and other high traffic public areas
- Doors
- Windows

Thermo-treated Wood Products

V.S. Non-treated wood

Thermo-treated wood has better grain structure. Greater stability. Exotic wood appearance. Durable. Low maintenance

V.S. Plastic

Thermo-treated wood is Real wood

V.S. Exotic Wood and Walnut

Thermo-treated wood is greater stability. Less expensive





Thermo-Treated Wood Flooring

Why Thermo-Treated?

- 1- Durability (scratches and abrasion are invisible).
- 2- Stable in high humidity areas
- 3- Inexpensive substitution for exotic wood and walnut
- 4- Low maintenance (finish doesn't crack because of the dimension stability of wood)

New Ideas and Applications

- Floors for bathrooms / Kitchens
- Wide planks parquet floors are dimensional stable
- Floors for basements and other high humidity areas
- Floors for high traffic public areas
- Designer floors (boards with color deviation)

Thermo-treated Wood Floors

V.S. Non-treated wood

Thermo-treated wood has better grain structure. Greater stability. Exotic wood appearance. Durable. Low maintenance

V.S. Exotic Wood and Walnut

Thermo-treated wood is greater stability. Less expensive





Questions and Answers

Environmentally Safe?

Thermo-treatment process uses only water and electricity to create the desired results, minimally impacting the environment. When you consider this along with the fact that chemicals are never introduced, it is realized that you have real wood material that is 100% environmentally safe and people friendly.

Does Thermo-treated wood shrink or swell?

NO. The dimension stability is dramatically improved, compared with non-treated wood (by 5-15 times). The darker the color, the better the stability. BUT, thermo-treated wood is STILL WOOD and cant be considered as ABSOLUTELY STABLE material, like stone. Some dimensional movements have to be taken into consideration.

Can Thermo-treated wood be used when constant ground contact is unavoidable?

Research has shown that when thermo-treated wood is kept in constant contact with the ground it does not decay. However, due to the chemical processes that occur in wood kept in constant contact with the ground, there is some loss of strength. For the time being, it is not recommended to maintain constant ground contact when using thermo-treated wood.

Is the color of thermo-treated wood consistent throughout the wood?

Yes. The color is consistent to the very center of the board.

Can Thermo-treated wood be glued?

Thermo-treated wood is suitable for jobs involving glue or paint. If water-based glue to paints are used, a longer penetrating time is required (mostly for softwoods). This is due to the diminished absorption of water and must be taken into consideration.

Is the smell of thermo-treated wood harmful?

In laboratory tests, the results show that the smell of thermo-treated wood, similar to the smell of charcoal, is not at all harmful but may be unusual to some people. For unfinished products, this aroma will fade away after 1 to 2 months from the time of treatment.

There is seldom any smell when the products are pre-finished. The tests show the emissions of thermo-treated wood is 3 times less than non-treated.

Does the product have to be finished for outdoor applications?

Thermo-treated wood is still a natural, organic material and will fade in color from UV exposure. The brown tint will fade to a silver/gray over a 1 to 2 year period if untreated with a UV protectant. Although the wood is resistant to checking, it is more likely for checking to occur if a UV protectant is not applied. Checking of the wood has no effect on the long term durability or its resistance to rot and decay.

How often is maintenance required for thermo-treated wood products?

Thermo-treated wood products have increased dimensional stability which allow it to maintain its size. This ensures the products will not shrink or swell following the application of a protectant. When the product maintains its size, it prevents the finish from cracking, which means less coats, less often. However, to ensure you are receiving the best results from your protectant, please follow the directions on the products' label.

Does the product have any guarantee?

According to European Standards, the life cycle of thermo-treated wood is determined by the degree of temperature reached during the process and can be recognized by the various colors. A dark chocolate color is class #1 in durability, meaning it has a life cycle of 25+years. A lighter honey color has a class #2 durability rating and has a life cycle of 15-25 years. * The life cycles are based on exterior applications.

What is the difference between the “heat-treated wood” and “thermo-treated wood” terms?

In the U.S., the term “heat treated wood” refers to kiln dried wood that reaches temperature of 55°C. The only purpose being to dry wood. Thermo-treated wood is a process that increases the temperature of wood beyond 200°F which create a change in the molecular structure, resulting in a new generation of wood material.



Wood World Trading



Wood World Trading

Established in Serbia in 2003, Wood World Trading became in 2007 a major shareholder in DVI sawmill in Loznica-Serbia, a company with vast experience in the field of wood processing.

The year 2008 witnessed major changes in the sawmill, raising the number of driers to 23 with a total capacity exceeding 2000m³ of logs per load. To date, the number of workers at Wood World Trade totals 140 in all areas.

WWT is specialized in the production of European lumber species mainly Beech, White Oak and Maple. Some American species are also produced as Cherry and Walnut and African species as Wenge and Zebrano. All wood species produced at WWT are subject to International standard grading. Lumber species are Kiln dried and follow a strict drying process, using the most state of the art technologies.

WWT has recently acquired its own transportation means. Therefore, our trucks can deliver material all over Europe and to our Trieste Wood terminal where our containers are loaded all over the world.

At WWT, we understand the importance and significance of preserving the tree's life form and also encouraging it. We value environmentally healthy practices and make sure that our offered species come from sustainable and managed forest sources.





LOCATION

Our sawmill is located in Loznica, Republic of Serbia (140Km from Belgrade). The area of the Republic of Serbia is 8.836.100 ha. The total area of the forests and forest grounds is 2.429.642 ha. The forest rate in Serbia is 27.3%.

Of the total forest and forest ground area, 50.91% is owned by the State and 49.09% is private property.

The wood stock in the forests of Serbia is 235,000,000m³/ha, and the growth per year is about 6,200,000m³ is 2.67m³/ha.

WOOD WORLD TRADING

Tel: + 381 22 639065

Fax: + 381 22 613893

Visnjevacka bb

22000 Sremska Mitrovica - SERBIA

belgrade@chabros.com

Chabros Addresses

Lebanon - Beirut

Tel: +961 5 450044
Fax: +961 5 457983
beirut@chabros.com

U.A.E. - Dubai

Tel: +971 4 2672280
Fax: + 971 4 2672231
chabrosw@emirates.net.ae

U.A.E. - Abu Dhabi

Tel: +971 2 5547547
Fax: +971 2 5540030
abudhabi@chabros.ae

K.S.A. - Riyadh

Tel: +966 1 4463223
Fax: +966 1 2956616
riyadh@chabros.com

K.S.A. - Jeddah

Tel: +966 2 6594946
Fax: +966 2 6595124
riyadh@chabros.com

Qatar - Doha

Tel: +974 4 500909
Fax: +974 4 604477
doha@chabros.com

Egypt - El Giza

Tel: +202 35390212
Fax: +202 35390214
cairo@chabros.com

Oman - Muscat

Tel: +968 24592555
Fax: +968 24592444
chabros@omantel.net.om



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INTERNATIONAL GROUP

www.chabros.com



