

PRODUCT SPECIFICATION

KERNOW CLADDING charred wood products are made according to traditional Japanese Yakisugi technology, which is gaining popularity in the Western world. Yakisugi is a natural eco-friendly wood treatment method when the surface of wood is flame charred in order to form a long-lasting, resistant to weathering layer with a unique look. In Japan this technology is a very common technique which has been used for centuries so the benefits of Yakisugi are considered to be unquestionable. Nowadays growing popularity of charred wood increased scientific interest in this field and various researches have proved these features of flame charred wood:

- less dimensional changes associated with better resistance to humidity;
- UV-light protection;
- protection of mold and wood decay due to increased pH value;
- less cracking and flaking while using;
- improved reaction to fire performance (charred wood is more fire-resistant compared to natural wood).

Our suppliers cherish authentic traditions and industrialize the technology as well. This approach helps us to improve the possibilities of Yakisugi and to solve the disadvantages that are common to archaic wood charring method, so:

- we ensure more even charring of the wood surface providing a more homogeneous char layer with less variation in the level of char and its' thickness;
- we reduce cupping effect due to more even temperature through all the width of the board;
- we choose coatings that safely stabilize the charred wood surface ensuring resistant, long-lasting result and less changes in appearance of the charred wood over time.



KERNOW CLADDING PRODUCTS

We offer two types of charred wood products: charred wood made according to ancient traditions and its modern variation – charred brushed wood.

Charred wood – Carbon

Charred wood products prepared using authentic Yakisugi technology are characterized by their exceptional look and natural protective properties they provide. Charring of the wood creates a distinctive surface pattern, rich dark color and protective layer which is very resistant to the effects of the atmosphere and time flow. Because of the sensitive mechanical properties of the charred surface, Carbon products are recommended for vertical surfaces (walls, fences) and ceiling. These products are also a great choice for the solutions of the exclusive design. Products are suitable for external and internal use.

Charred brushed wood – Black, Anthracite, Teak, Walnut and other shades

Wood products full of elegance. Products of this type are treated using modified Yakisugi technology in which charred wood surface is brushed and oiled revealing the natural beauty of the wood. Oil layer gives the wood a subtle shine and desired shade. Various shades are available: from the deep dark Black to the light Grey or, inspired by nature, Natural. The surface of these products has high mechanical durability so they are suitable for vertical as well as horizontal surfaces: walls, ceiling, terraces, fences, various constructions and design elements. Products are suitable for external and internal use.

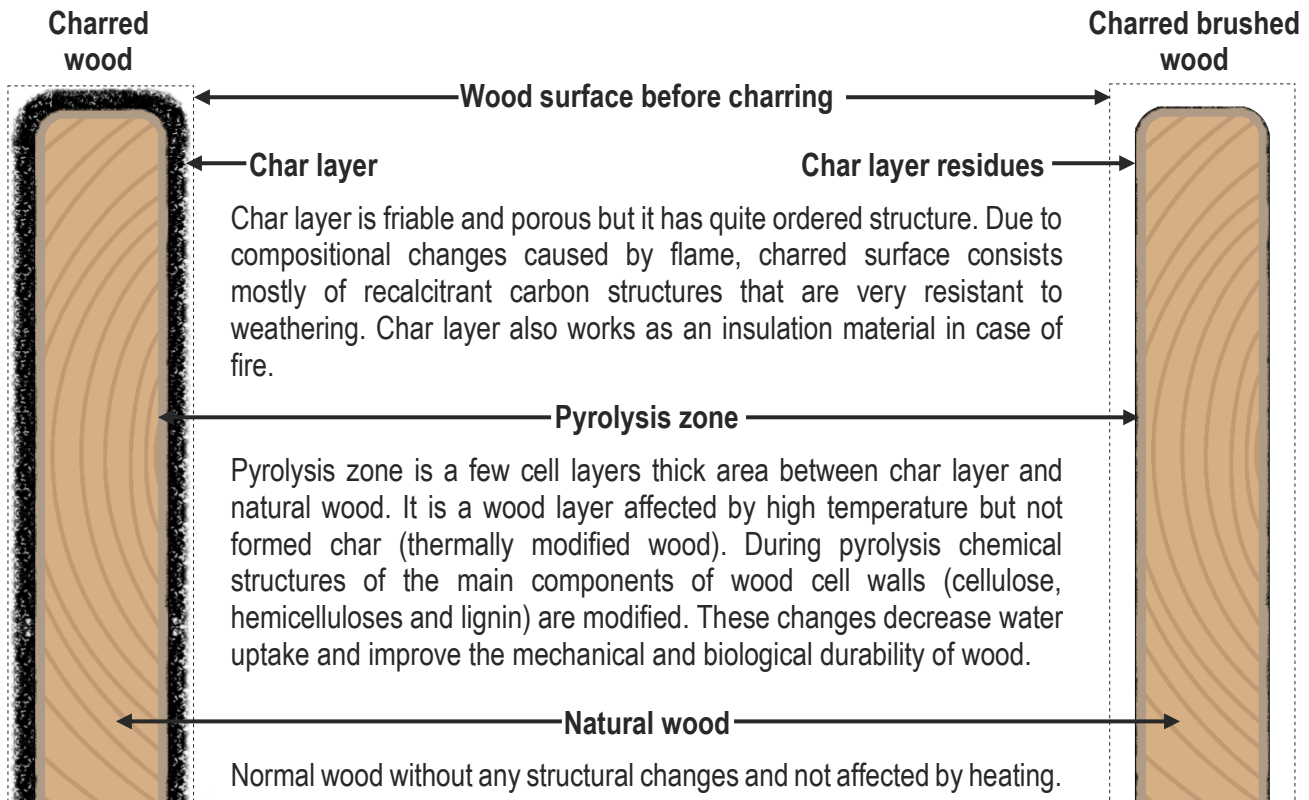


TECHNOLOGY

Manufacturing phases	Processed products
<p>1 phase. Charring</p> <p>The surface of the wood is charred in the uniquely designed line for wood charring and using the hand torches. Short treatment time and high temperature produces a heavily charred thin layer. The char layer serves as a natural wood protection. Rapid heating disorders the arrangement of molecules of the wood surface and ensures the stability of the charred layer during use. After charring the thickness of the product decreases up to 1 mm, the width decreases up to 2 mm. Since fire affects edges, the profile of the product becomes a little bit more sleek.</p>	<p>Charred products Carbon</p> <p>Charred brushed products</p>
<p>2 phase. Brushing</p> <p>The surface of the product is brushed so it becomes silky and smooth. Natural wood grain texture with dark charred latewood and light earlywood stands out. After brushing the thickness of the product decreases up to 2 mm, the width decreases up to 2 mm.</p>	<p>Charred brushed products</p>
<p>3 phase. Surface coating</p> <p>The surface of the product is coated with oil. Oil highlights natural wood structure and stabilizes the surface. Coating provides a strong water and dirt-repellent surface and protects the wood from deterioration (prevents the formation of mold and fungus). Oil also gives the chosen color for the brushed products (charred non-brushed products still remain of solid black color after oiling).</p> <p>The surface of the product can also be coated with fire retardant to ensure higher reaction to fire performance class.</p>	<p>Charred products Carbon</p> <p>Charred brushed products</p>

CHANGES OF THE WOOD SURFACE AFTER CHARRING

Charring forms three different layers of the wood: char layer, pyrolysis zone and natural wood.


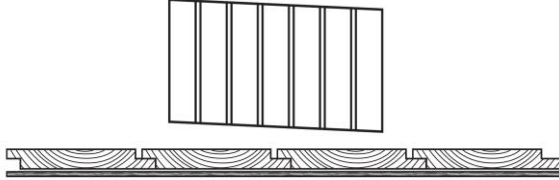

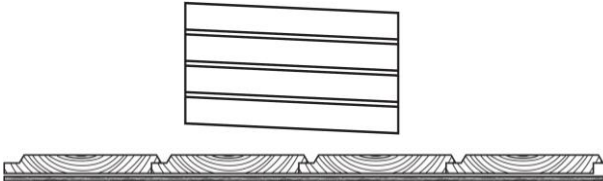

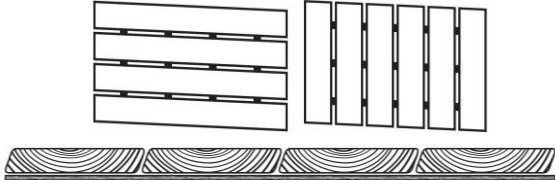

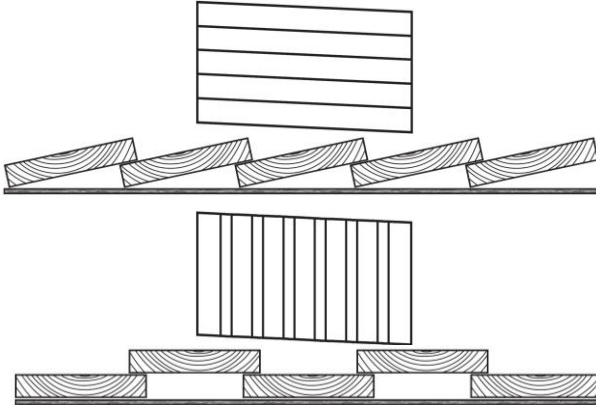

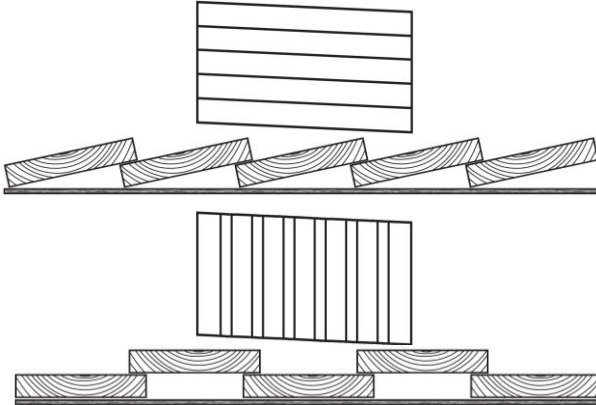

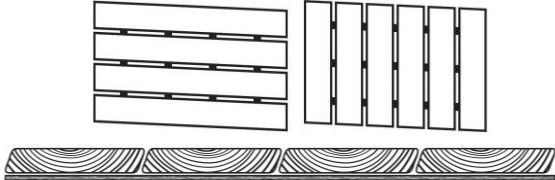

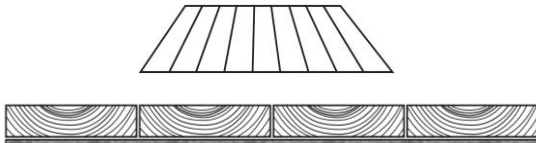


NOTE: pictures are not to scale.

WOOD SPECIES, STANDARD PROFILES AND MOUNTING

Spruce, larch and pine are the most common choices of our clients. We are using Nordic timber which is more resistant and durable because of a higher density. We can also offer oak, thermo wood, Accoya and glulam (glued laminated wood) products that are gaining popularity for their resistance, durability and stability – the features that are essential for the wooden construction of a precise accuracy.

The most popular profiles are listed below. Other profiles and products of the nonstandard shapes are also available.

Intended use and suitable product types	Profiles	Mounting
Cladding / interior / fence	 <p>Vertical mounting shiplap</p>	
	 <p>Horizontal mounting shiplap</p>	
	 <p>Rhombus</p>	
	 <p>Rectangular</p>	
Charred brushed products	 <p>Rectangular</p>	
Charred products Carbon	 <p>Rhombus</p>	
Terrace	 <p>Rectangular</p>	

NOTE: pictures are not to scale.

STANDARD DIMENSIONS

Charring the surface of the wood causes decrease of the thickness and width of the board. The thickness of charred wood products (Carbon) decreases up to 1 mm, the width decreases up to 2 mm. The dimensions of charred brushed wood products (Black, Teak, etc.) decrease even more because the surface of these products are affected not only by charring but also by brushing. The thickness and width of charred brushed wood products decrease up to 3 mm. Embossed surface pattern is an exclusive feature of traditional charred wood products which may cause slight dimensional variations. The thickness and width may vary between individual boards on a project. Dimensions of the board may also slightly differ measuring at different points. Actual thickness may vary by 1,5 mm and actual width may vary by 3,5 mm. Dimensions of standard products are listed below. Other wood species and the nonstandard dimensions are also available.

The technological process affects the profile of the products so it becomes a little bit more sleek. The change is less noticeable for profiles with rounded edges (such as a rhombus) and clearly visible for profiles with sharper edges (such as horizontal mounting shiplap).

Profile before charring	Profile after charring	Dimensions (thickness, mm x width, mm) Length – up to 6000 mm	
First Row – dimensions of untreated boards, Second Row – approximate dimensions of charred products Carbon, Third Row – approximate dimensions of charred brushed products			
		Spruce	20 x 95 / 120 / 145 / 195 19 x 93 / 118 / 143 / 193 17 x 92 / 117 / 142 / 192
		Larch	20 x 95 / 120 / 145 19 x 93 / 118 / 143 17 x 92 / 117 / 142
		Spruce	20 x 95 / 120 / 145 / 195 19 x 93 / 118 / 143 / 193 17 x 92 / 117 / 142 / 192
		Larch	20 x 95 / 120 / 145 19 x 93 / 118 / 143 17 x 92 / 117 / 142
		Spruce	20 x 68 / 95 / 120 / 145 19 x 66 / 93 / 118 / 143 17 x 65 / 92 / 117 / 142
		Larch	20 x 68 / 95 / 120 / 145 19 x 66 / 93 / 118 / 143 17 x 65 / 92 / 117 / 142
		Spruce	20 x 95 / 120 / 145 / 195 19 x 93 / 118 / 143 / 193 17 x 92 / 117 / 142 / 192
		Larch	20 x 95 / 120 / 145 19 x 93 / 118 / 143 17 x 92 / 117 / 142
		Larch	28 x 120 / 145 - - 25 x 117 / 142
		Pine	28 x 120 / 145 - - 25 x 117 / 142

NOTE: pictures are not to scale.

MAINTENANCE

Charred products Carbon

Interior and exterior products maintenance. Charred products Carbon are the most resistant to weathering and will last a very long time literally without any maintenance.

Charred brushed products

Exterior products maintenance. Charred brushed products will be weathering gradually and will require a regular reapplication of Woca Exterior Wood Oil layer. We recommend reapplying the oil layer of vertical surfaces (facades, fences) every 4-5 years. Due to more intensive use of the surface, we recommend reapplying the oil layer of horizontal surfaces (terraces) every 2 years. Apply one layer of oil according to the oil manufacturer's instructions. Approximate consumption 100 g/m².

Horizontal surfaces (terraces) should also be periodically cleaned. Cleaning frequency depends on the intensity of use. We recommend cleaning at least once a year with Woca Exterior Wood Cleaner or other wood detergent. Clean according to the detergent manufacturer's instructions.

Interior products maintenance. Any maintenance is not necessary unless the treated surface is mechanically damaged.

Fire retardant treated products

Exterior products maintenance. In order to ensure B-s1,d0 reaction to fire class we recommend reapplying fire retardant Ultra every 5 years. Apply one layer of fire retardant according to the manufacturer's instructions. Approximate consumption 150-170 g/m².

Interior products maintenance. Any maintenance is not necessary unless the treated surface is mechanically damaged.

THINGS TO EXPECT

Wood is raw material given by nature. The structure, characteristics and pattern of every board are unique. Wood treatment using open flame is also a process of natural origin. KERNOW CLADDING products contain all this naturalness within itself and reflects naturalness so:

- Due to the structure and grain pattern of the wood, there might be natural variation to the color and pattern of our products, product photos and samples are meant to be only a general guide to product appearance. If you want to be sure what the final result will look like, we would like to invite you to visit our factory and see our products or visit completed project which may be shown as an example of how the wood will look like over time. To ask for an appointment, please feel free to contact us by phone 0330 1220810 or email info@kernowcladding.co.uk
- The face and/or ends of some boards may check/split while charring. Checks/splits not exceeding the width of the board are not considered to be the defects.
- Lightening of the color over time is common to charred brushed products. Despite this, the expressive grain pattern of the wood remains clearly visible.
- The surface of charred products is soft and porous. The char layer is prone to wear and tear so it will flake and wear off over time, changing the aesthetic and revealing non-charred wood. Such transformation of the wood surface is common to traditional Yakisugi technology. We have improved wood charring technology to make this process significantly slower but we do not completely stop it.
- Products age differently because the wear and tear of the wood depends on the weathering. Products located in south facing or heavy weather-exposed aspects age quicker than products located in other aspects.
- Due to temperature and humidity changes some movement of wood may occur as it expands and contracts. This movement may result in cupping, bowing or twisting. All these things are not the defects, but a natural part of the charring process.

THINGS WORTH TO CONSIDER

We desire to supply the product that best suits your individual needs so we advise you to consider these details:

- The most suitable wood treatment technique depends on the end-use condition of the product. So we need to know your intentions before placing an order.
- It is important to know if there are requirements for reaction to fire performance in your project and the wood product should be of certain reaction to fire class. Knowing the requirements, we will be able to propose the product which meets them.
- Usually three sides of the product are oil coated: front surface and edges, back surface remains uncoated. Coating the back surface of the product is optional for additional price.
- If you are planning to cut the boards when installing, the cuts should be carefully coated so it is recommended to buy additional coating (oil or other).
- Clearly visible screws and/or wood color changes (stains) around the screws can be the result of improperly chosen fasteners. Such mistakes can ruin the appearance of even the highest quality products. We can offer stainless steel Essve screws, adjust the most suitable color of screw heads.
- In order to maintain the excellent appearance of KERNOW CLADDING products for many years it is essential to install them properly. You can find useful advice Installation Instructions for our products.

