

### Why Timber Cladding?

Timber Cladding and its ever increasing status as the number one choice over recent years amongst architects and designers for use as a protective skin for buildings are a true reflection of the natural and unique quality that wood contains. Whether the project is a large scale development or a small private dwelling, timber cladding not only allows greater flexibility in design but is also versatile, attractive and environmentally friendly.

Timber Cladding is suited to both contemporary and traditional styles and can be used in many different shapes and forms. From simple infill panel sections between windows, soffit and fascia areas or used throughout construction as complete decorative and protective skin for any type of building. Timber Cladding can be finished with wood stains and oils to create a rich warm vibrant finish, or it can also be left to weather naturally to a silver-grey colour to blend in with any type of surroundings.

Timber Cladding not only has excellent aesthetic benefits but also many environmental benefits also. Compared with many other types of modern cladding materials such as Concrete, Steel, Aluminium and PVC, Timber is recognised as one of the most environmentally friendly building materials available today. It is a naturally renewable resource and is available from fully certified and legally verified saw mills and forests from around the world. In addition, the growing and replanting of trees which generate their energy from the Sun thus helps to reduce global warming by requiring only a fraction of the non-renewable fossil fuels burned in the production of other cladding materials, whilst also absorbing CO<sup>2</sup> from the environment and turning this into oxygen.

Another advantage of Timber Cladding is that, due to its light weight and high insulation properties, it can also help to reduce building costs. When Timber Cladding is used in conjunction with a Timber Shingle/Shake roof, this eliminates any need for heavy masonry walls, which in turn reduces the size of foundation required and can deliver savings of up to 35% in the cost of ground works. Not only does Timber contain up to 12 times a lower Thermal Conductivity when compared to Concrete and 400 times when compared to Steel, but it also has a high strength-to-weight ratio, a stable performance in fire and very good sound absorption.

### Why choose MTS – the Wood Component Company?

At the Wood Component Company, we pride ourselves on the service and products we supply to our customers. Not only do we offer the very best quality of machined timber components made to order, we also source the finest quality timber from around the world from certified and legally verified sustainable sources. This certification ensures that criteria which apply to it are in place from any of the many sources around the world from which our timber is imported. While we offer standard patterns and profiles in timber claddings, we have greater control over our products as we produce them ourselves in our own custom built in-house manufacturing facility. This facility also enables us to be more creative and flexible with Cladding material and allows us to create any desired size, shape or profile a customer requires. In addition we can also offer a fire retardant and preservative treatment service for use with certain timber species required to meet building regulations.



### Standard Timber Profiles

TG&V

### Shadow Gap/Channel

### Bevelled / Feather Edged

### Rainscreen

### Shiplap

Cladding Profile	Nominal Thickness	Nominal Width	Standard Coverage	Lin/Mtr per m <sup>2</sup>	Cedar	iroko	Douglas Fir	Treated Softwood	Siberian Larch	Euro Oak
TGV	25mm	100mm	86mm	11.63	★	★	★	★	★	★
TGV	25mm	150mm	136mm	7.35	★	★	★	★	★	★
TGV	25mm	200mm	186mm	5.38	★	★	★	-	★	-
Shiplap	25mm	100mm	85mm	11.76	★	★	★	★	★	★
Shiplap	25mm	150mm	132mm	7.58	★	★	★	★	★	★
Shiplap	25mm	200mm	179mm	5.59	★	★	★	★	★	-
Rainscreen	25mm	100mm	94mm	10.63	★	★	★	★	★	★
Rainscreen	25mm	150mm	144mm	6.94	★	★	★	★	★	★
Rainscreen	25mm	200mm	194mm	5.15	★	★	★	-	★	-
Feather Edged	25mm	100mm	84mm	11.90	★	★	★	★	★	★
Feather Edged	25mm	150mm	130mm	7.69	★	★	★	★	★	★
Feather Edged	25mm	200mm	180mm	5.55	★	★	★	-	★	-
Shadow Gap	25mm	100mm	86mm	11.63	★	★	★	★	★	★
Shadow Gap	25mm	150mm	136mm	7.35	★	★	★	★	★	★
Shadow Gap	25mm	200mm	186mm	5.38	★	★	★	-	★	-
PAO	25mm	100mm	94mm	10.63	★	★	★	★	★	★
PAO	25mm	150mm	144mm	6.94	★	★	★	★	★	★
PAO	25mm	200mm	194mm	5.15	★	★	★	★	★	-
PAO	25mm	250mm	244mm	4.10	★	★	★	-	★	-
PAO	25mm	300mm	294mm	3.40	★	★	★	-	★	-
Shingles	10mm	400mm	Random	25 ft <sup>2</sup>	★	-	-	-	-	-
Cedar	Butt End	lengths	widths	per Btl	-	-	-	-	-	-

Other patterns and profiles and timbers available machined to order. Standard sizes can be reduced or increased to suit.



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## Cladding Species

### Western Red Cedar

This timber is imported from British Columbia, Canada. The heartwood has a wide range of colours, from salmon pink to chocolate brown, which weather over a period of time to a silver grey colour if left unsealed. Cedar heartwood is resistant to decay and is highly durable, giving it an anticipated lifespan of 40 to 60 years without any need for preservative treatment. It is a dimensionally stable timber with very low movement in service owing to its light weight and low density (390kg per m<sup>3</sup> when dry).

### Iroko

This hardwood is imported from Africa. It is a durable hardwood which can be used as external cladding. It is a clear grade hardwood with no knots and, due to its density, it can be suitable for use in areas where high impact or abrasion may occur. The timber itself can vary from a light tan to dark brown in colour and will weather to a silver or grey colour if left unsealed. Density is approx 660kg per m<sup>3</sup>.

### Douglas Fir

Yet another timber from the British Columbia region of Canada, this timber is a popular choice amongst architects and designers for use as a timber cladding. This timber is not to be mistaken for Native Douglas Fir as it is a much clearer grade of timber, it can be supplied almost knot free and has a very nice grain pattern. It is required as moderately durable and can be supplied both treated and untreated. It is stable in use and can be supplied in long lengths. Density is approx 530kg per m<sup>3</sup>.

### European Oak

Not to be mistaken for its American counterpart American White Oak, European Oak is a beautiful timber which has been used for centuries as cladding and joinery material. It can be used 'green' but careful allowance must be made for shrinkage and movement of the boards. It is mainly supplied as well seasoned Air Dried or Kiln Dried in both clear and knotty/character grades. The boards tend to be much shorter in length compared to other cladding species, averaging 2.4m in length. This timber can be left natural to weather to a silver grey colour, and stainless steel fixings should be used to help prevent staining. Density is approx 730kg per m<sup>3</sup>.

### European Larch

This timber is one of the harder conifers available on the market (density 510kg per m<sup>3</sup>). It is classed as moderately durable timber. It is a small movement wood and, if the sapwood is excluded, can be used untreated. It is light yellow in colour and has good resistance to impact and wear due to its density, it contains knots which are live, tight and sound.

### Treated Softwoods

Treated softwoods can be supplied using Red or White Deal which has been treated using a Tanalith treatment or a vacuum pressure treatment with chemicals to produce a durable softwood (Hazard Class III). The treatment can be clear, green or bright yellow in colour. Both Red and White Deal are knotty softwoods from Finland and Sweden. They are not naturally durable, but with the new treatments on the market today, they can be a less expensive alternative to other cladding species.

## Cladding Profiles and the range to choose from

### Horizontal Boards

Many different profiles can be used with horizontal boards, from our standard shiplap profile to open-jointed or specially commissioned once-off profiles. Our in-house tooling shop gives us a greater flexibility and a larger selection of profiles to choose from. Generally, Shiplap is produced in nominal 4" and 6" widths, but other sizes can be produced to order depending on the specie selected and the quantity required. **Tongue and Groove** profiles can be used horizontally, providing the tongue is faced upwards to prevent water penetration. **Open Jointed** detailing can also be used horizontally with the top and bottom edges of the boards chamfered to allow water run off. See the full range of cladding profiles in the cladding section of our website.

### Vertical Boards

This style of cladding is normally produced using narrower width boards, normally a nominal 1" x 4" board. It can also be produced in wider widths, depending on the profile and timber specie selected. Vertical boards allow greater flexibility in fitting around curved walls, and is also very tolerant with variations in surface dimensions. **Board on Board**, **T&V**, **Shadow Gap** and **Open Jointed** profiles can all be used in vertical applications. See the full range of cladding profiles in the Cladding section of our website.

## Moisture Control

As timber cladding is normally used as a rainscreen, it should be accepted that there will be some penetration of moisture/water through the cladding boards and, if the main construction is not masonry, a secondary protective impermeable membrane (breather membrane - Tyvek or equivalent) will be required behind the cladding. This control of moisture in the timber cladding is very important and adequate ventilation must be provided to help reduce the risk of movement and distortion of the wood. A cavity of at least the same thickness as the timber cladding is usually a good rule of thumb to allow drainage and ventilation.

### Fixing

Battens (normally durable hardwood or treated softwood) should be a minimum of 2 times the thickness of the timber cladding, depending on the type of fixing being used. For example, if fitting with standard nails, the battens should be at least 2.5 times the thickness of the cladding to be fixed, but with some improved nails (eg. annular ring shank) or screws, a batten twice the thickness is adequate. Vertical boards should be fixed to vertical battens with counter horizontal battens at a maximum of 600mm centres, and horizontal boards should be fixed to vertical battens again at a maximum of 600mm centres.

### Treatment

By selecting any of the naturally durable timbers (Class 1-3), no preservative treatment is required if heartwood-only grade is selected. Any timber that is classed as less than moderately durable will require preservative treatment. If the natural colour of the wood is to be preserved, a product (oil/stain/water-based finish) which contains a UV filter must be used to prevent the natural weathering of the wood to a silver/grey colour in most cases.

### Fire Protection

A number of different formulations are available to improve the spread of flame resistance to a Class 0 or a Class 1 rating. The building regulations and standards have rules which limit the area of "unprotected cladding" (i.e. combustible material such as wood) permitted in proximity to boundaries. Timber cladding is generally not permitted closer than 1m to a boundary, and height restrictions can also apply. The regulations for each area should be checked with your local authority.

## Technical Specifications

### Moisture Content

BS EN 942 simply states that the average moisture content of timber in joinery at the time of hand-over shall be in accordance with the relevant product standard. Hand-over is noted as the time the joinery is supplied by the manufacturers to the first purchasers and by subsequent suppliers to subsequent purchasers. (This is obviously open to interpretation and will vary, depending upon the supply chain, but the first purchaser could be a merchant and the second purchaser, the builder). The values given below are general European figures; more restrictive requirements may be requested in individual specifications.

Category	Average Moisture Content
External joinery	12 - 35
Internal	12 - 16
	For unheated buildings
	For buildings with heating providing room temperatures of 12 - 21°C
	For buildings with heating providing room temperatures in excess of 21°C
	6 - 10

### Durability and preservative treatment

Durability can be considered the most important consideration in the choice of timber species for cladding. Five classifications of natural durability are recognised. These relate to the resistance of the heartwood to attack by wood-decaying fungi:

Class 1	Very durable
Class 2	Durable
Class 3	Moderately durable
Class 4	Slightly durable (non durable)
Class 5	Not durable (perishable)
Timber	Cedar Iroko Douglas Fir Euro Oak Euro Larch Treated Softwoods
Class	1 1 2 - 3 2 3 2

### Choosing the right timber for your project

The principle components which must be considered when thinking about what timber specie to use for any individual projects are: Durability, Stability, Availability, Sustainability and Price. How one chooses their order is entirely a matter of preference, but Durability should always be a core element to one's final decision. When designing a building which is to be clad or part clad in timber the timber selected should be classed as moderate to very durable if the timber is to be used without any preservative treatment.

The finished thickness of the cladding board is generally determined by the profile and timber specie selected. For example, Cedar is generally finished at 17mm in tongue and groove boards, whereas Larch is generally 19mm.