

# WESTERN RED CEDAR AND IT'S USES



WESTERN RED CEDAR EXPORT ASSOCIATION





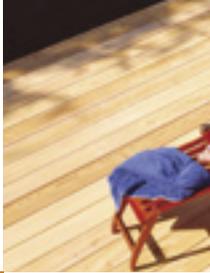
**STUNNING BEAUTY ■ NATURAL DECAY RESISTANCE ■ DIMENSIONAL STABILITY  
SUPERIOR INSULATION VALUE ■ RENEWABLE RESOURCE**

Western Red Cedar's popularity as a building material dates back thousands of years to the Native Americans who first settled the Pacific Coast region of North America. Its versatility made the trees essential to Native peoples prompting them to revere it as a central part of their life. "Tree of Life" is the name Native Americans of the Pacific Northwest gave to Western Red Cedar, which furnished them with so many elements of their existence.

Native craftsmen and artists found different uses for each part of the tree. Working with tools made of stone, bone and shell, craftsmen carved canoes, totem poles, storage boxes and ceremonial masks from the heartwood. Others wove the inner bark into mats, baskets and water repellent clothing, shaped the withes into ropes and fashioned the roots into baskets and cords.

Following the region's settlement, homebuilders found the stability of Western Red Cedar ideally suited to create flat, straight planks that could be used to build large homes. Natural oils found in the wood act as preservatives that helped the wood resist decay and insect attack. Over time, different settlements developed individual styles and flair but all took advantage of Western Red Cedar's workability, performance and weather-resistant characteristics.

By the dawn of the 20th century, the uses of Western Red Cedar expanded to a large variety of applications that benefited from its unique characteristics and beauty. Today this legendary species continues to enhance the lives of consumers around the world. Western Red Cedar's performance characteristics and lasting durability combine to bring form to function. Its exceptional beauty brings warmth, character and longevity to homes and commercial buildings making Western Red Cedar the enduring choice of discerning architects and craftsmen alike.





EXTERIOR CLADDING  
DECKING  
FENCING  
GARDEN ACCESSORIES  
INTERIOR PANELING  
WINDOWS

## WESTERN RED CEDAR IS IDEAL FOR

BLINDS  
SHUTTERS  
DOORS  
OUTDOOR FURNITURE  
PLAYGROUND STRUCTURES  
MUSICAL INSTRUMENTS  
SHAKES & SHINGLES  
SAUNAS





# THE FOREST RESOURCE

WESTERN RED CEDAR FROM BRITISH COLUMBIA IS HARVESTED LEGALLY AND SUSTAINABLY. PRODUCERS ARE COMMITTED TO HIGH ENVIRONMENTAL STANDARDS.

## HARVESTS

Less than 1% of BC's Cedar growing stock volume is harvested each year, with three quarters of the harvest originating from the coastal forest areas. Clearcut harvesting is now being phased out on the BC coast. A system called variable retention, which requires retaining enough trees, snags and coarse woody debris, to keep the forest structure intact is now widely practiced. This can involve leaving groups of trees intact, or single trees. The degree of retention depends on the designated zoning of the forest. For zones in which the emphasis is on conserving old-growth, most of the trees will be retained.

## GROWTH AND REGENERATION

Western Red Cedar seldom occurs in pure stands. It is highly shade-tolerant and a major species in coastal climate forests.

Artificial regeneration of Western Red Cedar began in British Columbia in the late 1960s in association with other species. BC is aggressively replanting Cedar. An average of about 8.0 million seedlings are planted each year (1991-2002) on the coast which represents about 15% of total coastal planting. The result is expected to be an increase in Cedar available for harvest in 70-plus years.

Although BC still has a higher proportion of old-growth, second-growth red Cedar timber is gradually coming on stream. Along with old-growth, second-growth is now harvested for the high value wood it produces.

## CERTIFICATION

British Columbia is a leader in third-party sustainable forest management certification. Suppliers of Western Red Cedar are committed to high environmental standards.

There are three Certification processes in use in BC: Canadian Standards Association's Sustainable Forest Management Standard (CSA); Sustainable Forestry Initiative (SFI); Forest Stewardship Council (FSC). All involve independent, qualified third party audits that measure the company's planning, practices, systems and performance against predetermined standards.

They all ensure that forest management promotes sustainability. They all examine how operations address a range of forest values such as biological diversity, wildlife habitat, soils and water resources. They all ensure that harvest areas are reforested, that laws are complied with, and that there is no unauthorized or illegal logging.

Customers of BC based companies have the added confidence of knowing that certification is not a substitute for government regulation but rather an added assurance. A recent independent review found that BC is among the top of the 38 jurisdictions studied. These policies are backed by enforcement and the independent Forest Practices Board, which monitors both industry and government actions.



WESTERN RED CEDAR HAS THE HIGHEST RATING FOR DURABILITY OF ANY SOFTWOOD.

#### RESISTANCE TO DECAY

Western Red Cedar heartwood is renowned for its high decay-resistance. This natural durability is attributed to the presence of extractives, mainly the thujaplicins, and to a lesser extent, the water-soluble phenolics which are toxic to a number of wood rotting fungi.

North American Western Red Cedar is considered to be Class 2 (durable against fungi) - S (Hylotrupes) - S (Anobium) - S (termites). This is in the highest category for durability of any softwood listed in the EN standard. Cedar has durability class 1 rating according to Australian standards.

#### RESISTANCE TO TERMITES AND WOOD BORERS

Western Red Cedar's natural resistance to termite attack has been found to vary with termite species, source of wood materials and feeding conditions. Western Red Cedar is "non-preferred" i.e., the termites will not eat Western Red Cedar if they have access to other wood species with less resistance.

#### DIMENSIONAL STABILITY

Western Red Cedar wood has excellent dimensional stability because of its low wood density and low shrinkage factor. A major contributor to this stability is the fact that its moisture content at the fibre saturation point is 18 to 23%, compared to 25 to 30% in most Canadian softwoods. As a result, Western Red Cedar shrinks and swells minimally, displaying only small movements with changes in humidity. Lower absorption of water is a result of the high extractive content blocking absorption sites. The ability of Western Red Cedar to resist moisture absorption is noteworthy.

This property contributes to Western Red Cedar's suitability for use in roofing, siding, decks and a number of other applications where dimensional stability and water repellency is important. One of the benefits of this is that the wood is superior in resisting warp or twist from its fastenings.

## THE RAW MATERIAL PHYSICAL PROPERTIES OF THE WOOD





## WESTERN RED CEDAR OFFERS A COMBINATION OF UNIQUE PROPERTIES AND STUNNING BEAUTY.

### THERMAL AND INSULATING PROPERTIES

Western Red Cedar has good insulation value because of its low wood density. It is the best insulator among the most common available softwood species and is far superior to brick, concrete and steel. This property also ensures that decks built with Western Red Cedar will be cooler in the heat of summer than denser species or man made products.

### FLAME SPREAD RATING

The flame-spread rating of Western Red Cedar is 67 to 73 (Class II rating) and the smoke developed classification is 98. Both of these are used to regulate the use of materials where potential to generate smoke or smoke control movement is important.

Since Western Red Cedar has a low flame-spread rating, it will perform better than most dense softwoods which have flame-spread ratings around 100.

Western Red Cedar has a flame spreading rate and a smoke-developed classification that are considerably below the maximum limits set by US and Canada Building Codes.

### ACOUSTICAL PROPERTIES

Western Red Cedar's ability to damp vibrations is an important acoustical property that makes it particularly effective for use as paneling and decking to help reduce or confine noise. Conversely the superb acoustic resonance properties of thin edge grain Western Red Cedar make it a good choice for musical instruments.

### WORKABILITY

Western Red Cedar is among the easiest to work with because of its straight grain and uniform texture. It planes and sands cleanly and, because of its low wood density, requires little energy to saw or otherwise work. It also glues well with a wide range of adhesives and gluing conditions.

### FINISHING

Western Red Cedar accepts and retains a wide variety of finishes exceptionally well. In fact, Cedar is considered to have the highest finish retention properties of all softwood species. It is Western Red Cedar's lack of pitch and resin, low percentage of sapwood, dimensional stability and fine texture that combine to deliver its unique finishing properties.

# THE RAW MATERIAL





## END USES



### OVERVIEW

The unique properties of Western Red Cedar enable end uses distinct from other softwood species. Western Red Cedar is renowned for its naturally occurring resistance to moisture, decay and insect damage. Its natural durability, dimensional stability and exceptional beauty make it ideal for exterior uses including roofs, cladding, fences, decks, garden features, planters, outdoor furniture and playground equipment. Indoors, Cedar's dimensional stability and its appearance also make it perfectly suited to a variety of uses including window blinds, paneling, moldings and sauna paneling. Cedar is also popular for doors, windows, and shutters.

The wood is simple to work using either hand or machine tools. It is lightweight and easy to handle and install for both the professional and do-it-yourselfer.



## COMMON END USES

WESTERN RED CEDAR CLADDING AND PANELING SUITS A VARIETY OF ARCHITECTURAL STYLES AND WORKS BEAUTIFULLY IN BOTH INTERIOR AND EXTERIOR APPLICATIONS.

### CLADDING AND PANELING

Appearance, durability, insulation value and dimensional stability are Western Red Cedar's primary advantages as exterior cladding and interior paneling material. Its ability to damp vibrations and reduce or confine noise makes it particularly effective for use as paneling. It is suitable for any variety of architecture and is versatile enough to be used in residential, commercial or industrial structures.

Western Red Cedar is the ideal species for use in saunas. Its low thermal conductivity, lack of pitch, fine grain and distinctive aroma makes Cedar superior to other softwoods for this popular application.

Western Red Cedar cladding is available in a range of types and grades. Bevel is the most widely used Cedar cladding type in North America. It is produced by re-sawing boards at an angle to produce two pieces thicker on one edge than the other. The manufacturing process results in pieces with one face saw-textured. The other face is smooth or saw-textured depending on the grade and customer preference. Bevel is installed horizontally and gives an attractive shadow line that varies with the thickness of siding selected. Bevel is available in clear and knotty grades. Clear siding gives premium quality appearance. Knotty siding has warmth and casual charm ideal for homes, cottages, club-houses and applications where a rustic appearance is desired. In addition to solid bevel, some companies

produce finger-jointed bevel. The precision-fitted joints are virtually invisible and stronger than the surrounding fiber.

Tongue-and-groove exterior cladding or interior paneling is widely used for its character appearance and versatility. It can be installed horizontally or vertically, each giving a distinctly different look. The joints between adjoining pieces are usually v-shaped but flush, "reveal" and radius joints are also available. The different joints and surface textures in tongue-and-groove siding combine to provide a range of line effects that enhance the product's versatility.

Lap claddings are normally supplied in a variety of patterns. Channel is a popular type of lap cladding and is used when a rustic appearance is desired. It is a versatile siding usually installed vertically. In channel, the profile of each board overlaps that of the board next to it creating a channel that gives shadow line effects, provides excellent weather protection and allows for dimensional movement.

Board and batten designs use wide clear or knotty boards spaced apart with narrower battens covering the joints. Various combinations of different widths are used to create looks suitable for large or small applications.



WESTERN RED CEDAR PATIO DECKING OFFERS BEAUTY, PERFORMANCE AND PEACE OF MIND.

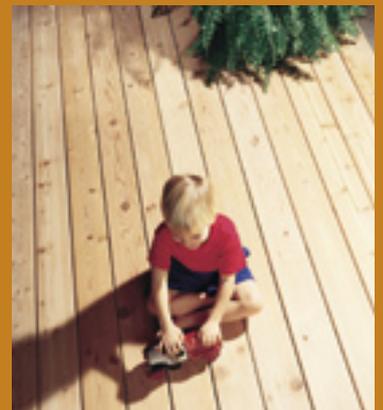
### PATIO DECKING

Western Red Cedar is prized for use in decking because of the wood's pleasing appearance, natural durability and dimensional stability. Other woods require chemicals to protect them from decay and insect attack but Western Red Cedar is one of the few woods with its own "grown-in-the wood" preservative. It shrinks and swells much less than other softwood species, stays flat and straight, and resists checking. It is free of pitch and resins making it an excellent base for protective coatings. Western Red Cedar is a renewable material, harvested from sustainably managed forests. Plastic composite decking materials require much larger amounts of energy to produce. A deck constructed with Western Red Cedar is enjoyable even at the warmest time of the year. While decks made of plastic or composites can become unbearable in the summer heat, Western Red Cedar's low density ensures a cool comfortable surface. Western Red Cedar decks are firm but resilient underfoot, not hard and unyielding as are many other materials.

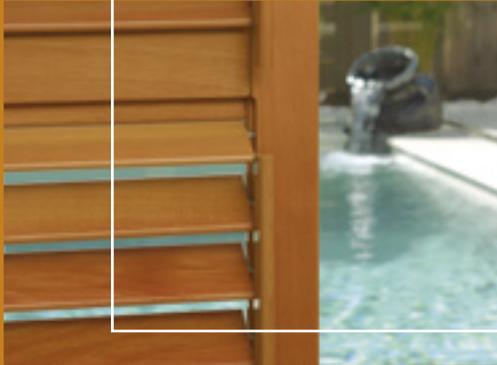
Western Red Cedar decks can be accessorized with a variety of pre-cut handrails, balusters, post caps, fencing, lattice and other decorative items.

### TRIM BOARDS

Western Red Cedar is widely used for exterior trim such as corner boards, fascia, skirting, and door and window trim. Western Red Cedar trim complements all contemporary cladding materials and a wide range of architectural styles. Trim boards are also available in clear and knotty grades. Clear grades are the highest quality straight-grained products and are specified when appearance of consistent even quality is desired. Knotty boards present a more rustic appearance.



COMMON END USES



CEDAR IS A VERSATILE BUILDING MATERIAL WITH UNIQUE PROPERTIES THAT MAKE IT SUITABLE FOR A DIVERSE RANGE OF APPLICATIONS.

#### FENCES AND GATES

Properly constructed and maintained, a Cedar fence will look good for years. Using materials of the same quality and texture used on and around the home ensures continuity and a harmonious balance.

#### TIMBER CONSTRUCTION AND LANDSCAPE STRUCTURES

Solid sawn timbers allow diversified construction features to be made. They can be used for many types of engineered structures, commercial, industrial and residential buildings as well as landscape structures such as bridges, arbors, pergolas, gazebos, field houses and others. For both of these use groups, Western Red Cedar offers the advantages of beauty, design flexibility, exceptional dimensional stability and natural durability.

#### WINDOWS AND DOORS

Western Red Cedar's beauty, dimensional stability, fine grain and durability make it ideal for use as windows and doors. Whether they are stained to bring out the natural earthy tones, or painted, Western Red Cedar windows and doors will complement any architectural style.

#### POST & BEAM AND LOG HOMES

A major use of Western Red Cedar is in log houses, either as solid wood or as a component of laminated logs. Solid logs are peeled and machined to produce pieces that may be cylindrical or square in cross section, or combinations of both. In laminated house logs, Western Red Cedar is used as an exterior component for its visual and performance qualities.

#### SHAKES AND SHINGLES

Western Red Cedar is considered superior to other wood species in the manufacture of shakes and shingles because of its light weight, dimensional stability, straight grain, and natural durability. Shakes and Shingles are used as both a roofing products as well as exterior cladding.

#### UNIQUE AND SPECIALITY PRODUCTS

Due to its distinctive appearance and highly desirable natural characteristics, Western Red Cedar is used to produce unique products. These include musical instruments, garden furniture, window blinds, decorative boxes and bird houses. While some of these are only for the hobbyist, many of these products are produced in commercial quantities.

## COMMON END USES





EXTERIOR CLADDING  
PLAYGROUND STRUCTURES  
PATIO DECKING  
SHELTERS  
WINDOW BLINDS  
SAUNAS  
DOORS  
WINDOWS  
SHUTTERS  
PANELING  
MOLDINGS  
GARDEN FURNITURE  
SHAKES & SHINGLES





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