RFP
Russia forest products

Top-quality larch veneer from Russia

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Larch veneer is a perfect raw material for softwood plywood, LVL and floor panels.

RFP is a group of companies involved in the harvesting of roundwood, wood processing, trading and logistics. RFP employs more than 6 000 people. It is the leading supplier of Russian timber products in the Asia-Pacific region: 15% of Russian exports to China, 15% — South Korea, 10% — Japan.

The largest shareholder of RFP is the Russian-Chinese Investment Fund (RCIF), a principal investment fund established by two government-backed investment vehicles — the Russian Direct Investment Fund (RDIF) and the China Investment Corporation (CIC).

Forestry and Logging

The largest by amount of forest resource in the Far East.

- the top position in logging volume in the Far East: 2.2 million cubic metres a year;
- the top position in export of roundwood to China: 15% of Russian exports a year;
- 2nd place by annual allowable cut in Russia: 4.2 million cubic metres a year;
- 3rd place among world suppliers of roundwood to China.

Wood processing

One of the largest wood-processing complexes in the Far East.

- existing annual output of 360 thousand cubic metres of green sawnwood;
- one of the largest plants in the veneer-sawing industry in Russia;
- one of the largest KD sawnwood plants in Russia under construction.

Transport and logistics

The Amur Shipping Company is the largest shipping company with a 150 year history.

- the biggest ship-owner in the Russian Far East: more than 100 vessels, including river-sea, dry cargo ships, tankers and large-size cargo vessels;
- the Amur Shipping Company handles about 1.3 million tons a year.

Amursk advanced
wood processing center

RFP is developing one of the largest wood processing investment projects in the Russian Far East, the Amursk Advanced Wood Processing Center, with total investments for the project comprising $300 million US of which $190 million US has already been invested. The project is being realized under strategic partnership with the Vnesheconombank.The project has been included in the list of Priority Investment Projects for forest development.

Rotary cut veneer plant with production capacity of

300 000 m³

(already functioning)

Sawnwood plant with annual output capacity of

250 000 m³

(is to be completed in the 2nd half of 2 016)

Fuel pallets plant with annual output capacity of

100 000 t

The core processing facilities of RFP are located on an industrial land plot in the north-western part of the city of Amursk (Khabarovsk Territory) with a total area of around 200 hectares (the land is owned by RFP). The site is uniquely well positioned in terms of power supply, logistics for raw material supply and access to necessary engineering infrastructure, thus making it ideal for development of the project:

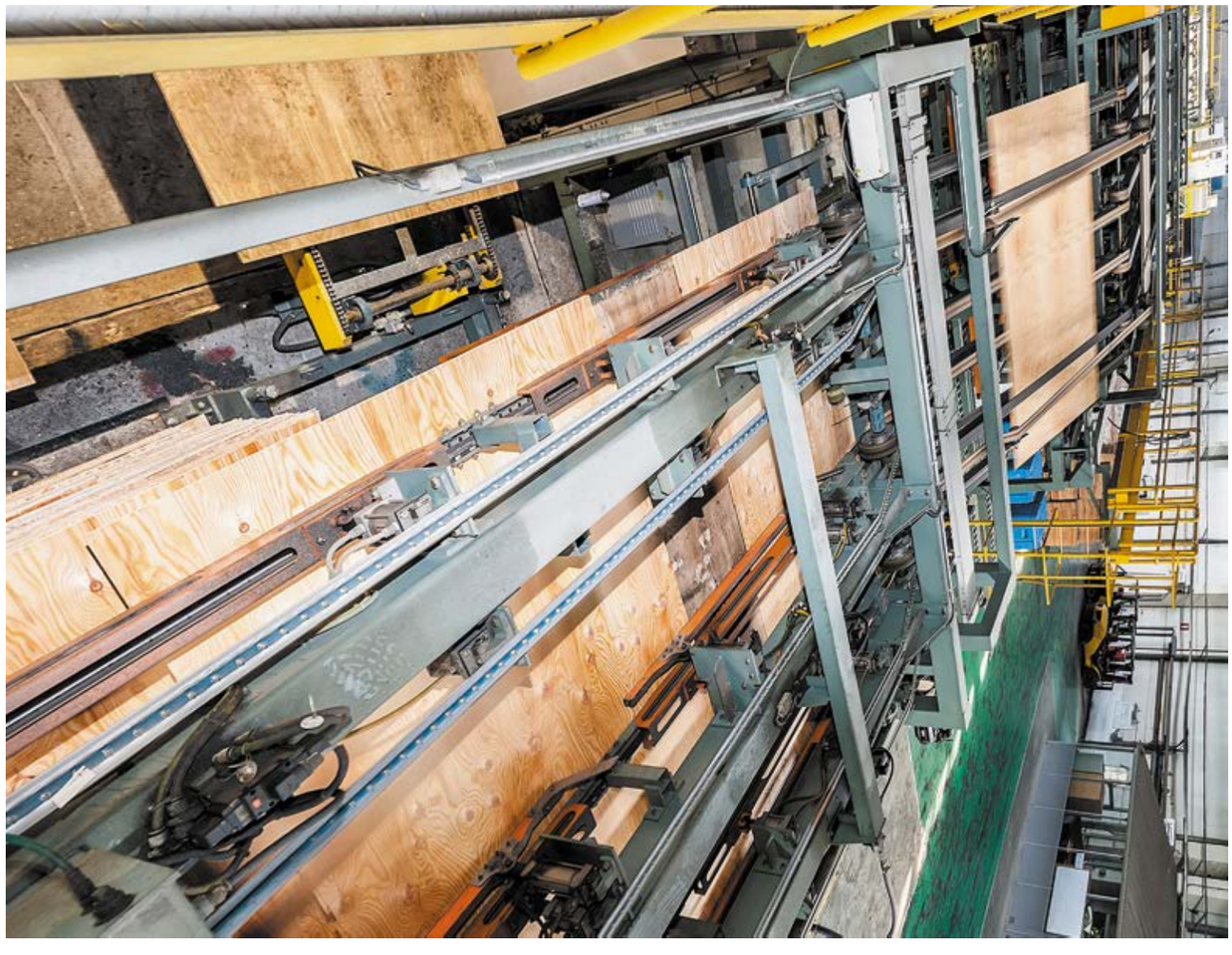
— Land for auxiliary production facilities, including petroleum, oil and lubricants storage, fire-engine house, gatehouse and other ancillary facilities

— Federal railway track, as well as a local highway connected to the site

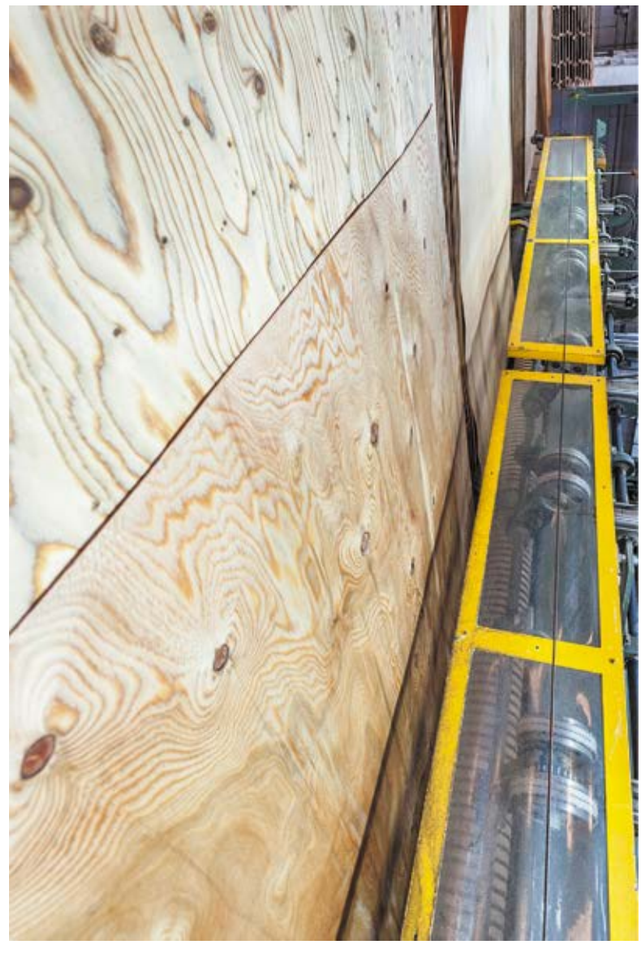
— Harbour is 5-7km from the site allowing for the delivery of raw materials to the site by means of water transport

— 10kv double-circuit power line from the Amursk thermal power station, located 3.5km from the plant (the capacity of the thermal station is 266 megawatts, with the current utilization rate being less than 5%)

Rotary cutting

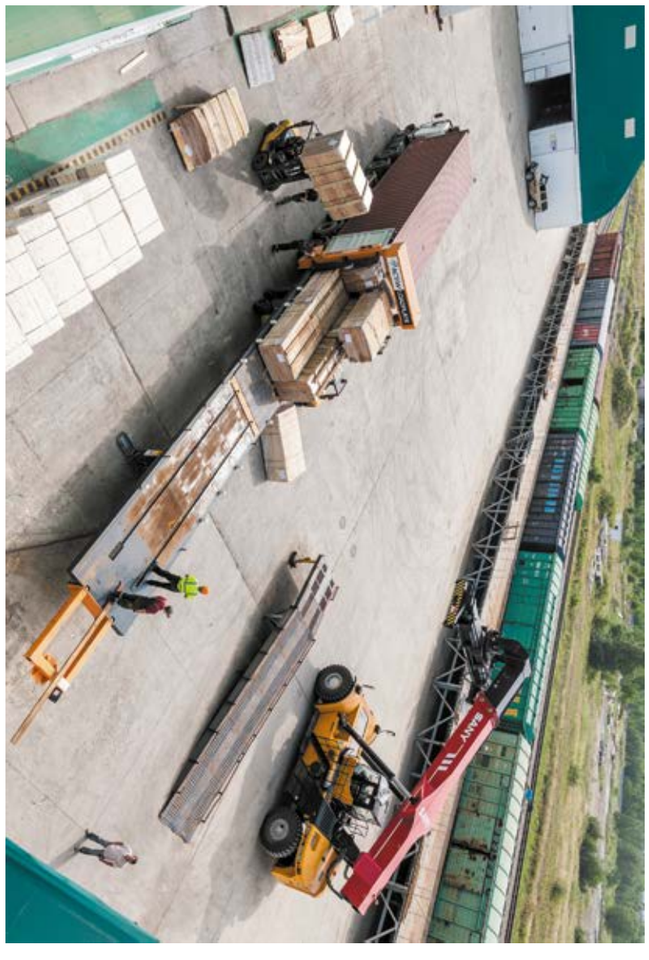


Grading

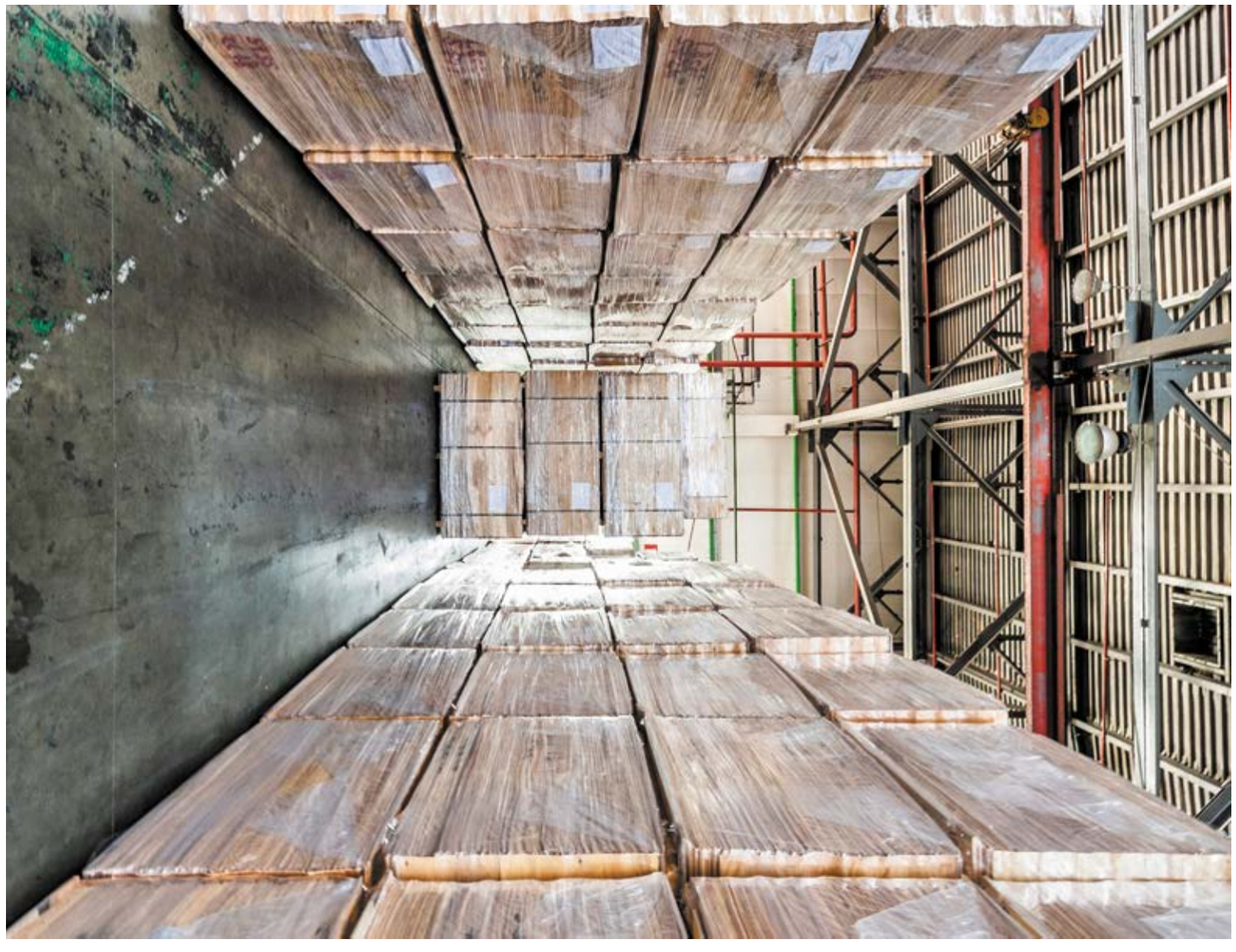


Drying

Loading



Packing



Storage

Amursk advanced
wood processing center

The rotary cut veneer plant works only with high-quality equipment of world-renowned brands such as Hashimoto, Denki, Uroko and Eno: 2 debarking machines, 3 rotary-cutters, 3 drying machines, 4 welding machines and 1 packing machine.

Our products can be shipped by any means of transport: by bulk in ships, containers by ship/motor vehicle or railway wagon.

Application of larch veneer

RAW MATERIAL	Larch (Larix Dahurica), wild-grown in the northern latitudes in the valley of the Amur river
GOODS REQUIREMENTS	— JAS MAFF Notification No.1751 dated December 2, 2008 — GOST 99-96 — Additional requirements approved by the Parties
THICKNESS, mm	1.5 (min)–4.0 (max)
MOISTURE CONTENT	Max. 10% at the exit from drier at the Seller's Plant
SIZE, mm (to be customized)	6 ft - width: 950–980 6 ft - length: 1,895–1,910 8 ft - width: 1,250–1,270 8 ft - length: 2,490–2,530
HEIGHT OF THE FOOT OF THE GOODS WHEN PACKAGING, mm	800 (min.)–1,100 (max.)
SIZE OF PALLETS FOR THE TRANSPORTATION OF GOODS, mm	6 ft: 1,890 x 950 8 ft: 2,500 x 1,270
PACKAGING	— Package covering by polyethylene film over the entire surface (except the bottom) — On the top 1-5 veneer sheets of poor quality are to be placed. — Finishing package winding by stretch film (except the top and bottom)

	LONG 6' (6X3) 1		LONG 6' (6X3) 2		LONG 8' (3X8)		LONG 8' (4X8)	
	Invoice	Fact	Invoice	Fact	Invoice	Fact	Invoice	Fact
Lengh, mm	1895	1895–1897	1900	1915–1917	2490	2490–2495	2490	2490–2495
Width, mm	950	950–990	950	950–990	950	950–990	1250	1250–1290
Thikness, mm		1–4		1–4		1–4		1–4
Moisture. %		6–10		6–10		6–10		6–10

	SHORT 6' (3X6)		SHORT 6' (3X6)		SHORT 8' (3X8)		SHORT 8' (4X8)	
	Invoice	Fact	Invoice	Fact	Invoice	Fact	Invoice	Fact
Lengh, mm	1860	1000–2500	1860	1000–2500	2480	1000–2500	2480	1000–2500
Width, mm	945	945–947	950	955–957	945	945–947	1245	1245–1248
Thikness, mm		2–4		2–4		2–4		2–4
Moisture, %		6–10		6–10		6–10		6–10

VICES AND DEFECTS OF WOOD PROCESSING	F (FACE)	B (BACK)	CC (CENTRAL CORE)	SG (SHORT GLUE)	MM
KNOTS					
Conjoined, sound light and dark	permitted diameter, mm (not more)				
	35	45	75		without restriction
Non-united, falling out and holes from them	permitted diameter, mm, not more				
	25	40	65		without restriction
	amount defect width (mm) clipping strip width of 300 mm.		amount defects width (mm) in the clipping 600x300 mm		
	1/5 the panel width		1/4 the panel width		
SPLITS					
Serried	permitted without restriction in the amount of up to 1/2 of the length of the panel				
Open	admitted edge width, mm, not more				
	5	10	45		without restriction
	Length, not more than				
	1/3 the panel length				without restriction
VICES STRUCTURE OF WOOD					
Slope of grain, cross-grained	permitted				
Light bark	permitted				
Dark bark	permitted by regulations, n. 1a				
Resin pocket	length up to 60 mm		length up to 80 mm		without restriction
Stratification	not permitted				without restriction
CHEMICAL COLORING					
Yellowness, red stain	permitted				
FUNGAL LESIONS					
Sapwood fungal color (blue, colored sapwood stains)	not permitted		permitted		
Browning					
Decay	not permitted				permitted
DEFECTS PROCESSING					
Ridge	not permitted				
Groove, scratches	permitted with not exceeding 10 mm				
Bark patch	not permitted	permitted by regulations n. 1a			without restriction
Incision	permitted				
BIOLOGICAL DAMAGE					
Worm holes	permitted if not exist as a group		Without restriction		

Best material for *premium quality LVL and plywood*

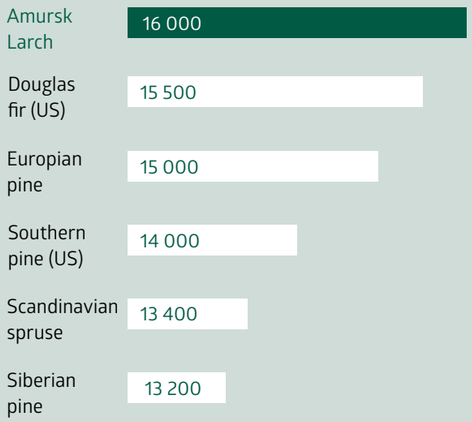
Based on the results of mill trials held in Finland in 2015 and analyzed by KYAMK University of Applied Sciences, Amursk Larch veneer is optimal raw material for production of high grade LVL and plywood.

Amursk Larch veneer from RFP has excellent handling properties and the technical values considerably exceed the market median grade. Density and strength properties are higher than any other coniferous species can give.

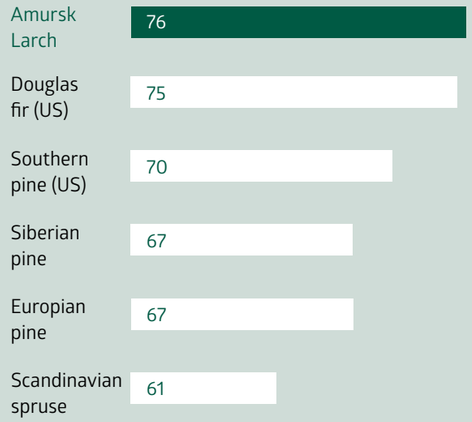
Design values of Amursk Larch veneer are high enough to exceed the most stringent market requirements for structural LVL or plywood. All veneers can be used in producing structural products, and there is minimal reject in veneer stress grading.

In all respects Amursk Larch is superb raw material for LVL and plywood. Amursk Larch veneer from RFP will earn LVL and plywood producers higher product quality, added price and marketing advantage over the competition.

MODULUS OF ELASTICITY
AVERAGE, N/MM²

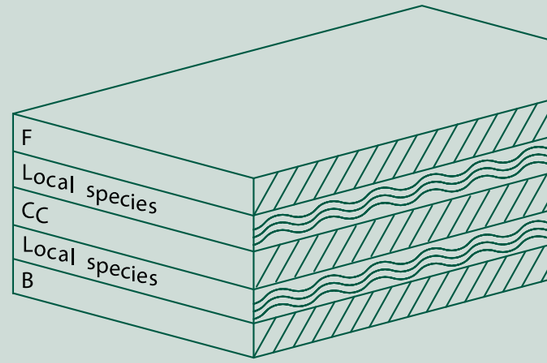


MODULUS OF RUPTURE
AVERAGE, N/MM²



Excellent *booster material* for plywood

In addition to superb strength properties Amursk Larch veneer offer perfect flatness and easy handling. This makes Amursk Larch a great raw material for softwood plywood. It can also be used as an excellent booster material to enhance the market value of the plywood in those instances where good quality raw material is in the short supply. Amursk Larch veneer can be transported over long distances, which doesn't influence veneer values regarding maintaining moisture level and general quality.

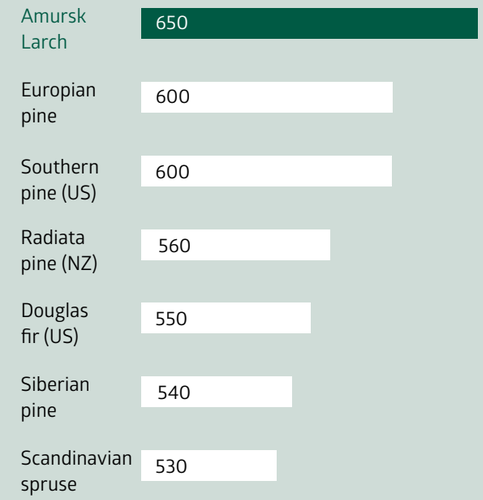


Example of using Amursk Larch as a booster material for plywood production. F, B, CC grade — Amursk Larch Other layers — Local species

Excellent *booster material* for LVL

The exceptionally high technical values of Amursk Larch can be fully utilized when used as raw material for engineered wood products like LVL. In the areas where LVL manufacturers experience shortage of better grades raw material, Amursk Larch veneers can be used to produce LVL in 15 000-17 000 N/mm² or higher MOE grades or as booster material in combi constructions. By using the Amursk larch as booster raw material, LVL manufacturers can efficiently upgrade market value of their lower veneer grades.

LVL DENSITY COMPARISON, KG/M³



F

Not spliced Goods. Natural whole piece. Long grain
Direction of grain shall be parallel to veneer length

For use on face layers of plywood

Face grade

Larch veneer

Face grade

Larch veneer

B/JB

Jointed whole piece acceptable
Spliced veneer along the long grain acceptable

Back/joint back grade

Larch veneer

For use on back layers of plywood

Back/joint back grade

Larch veneer

CC/JC

Spliced veneer along the long grain acceptable
For use in the inner layers of plywood

Center core/joint core

Larch veneer

For use in the inner layers of plywood

Center core/joint core

Larch veneer

SG

Spliced production, Joint whole piece acceptable.
Short grain Direction of grain shall be parallel to veneer width

Short (spliced) grade

Larch veneer

For use in the inner layers of plywood

Short (spliced) grade

Larch veneer

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