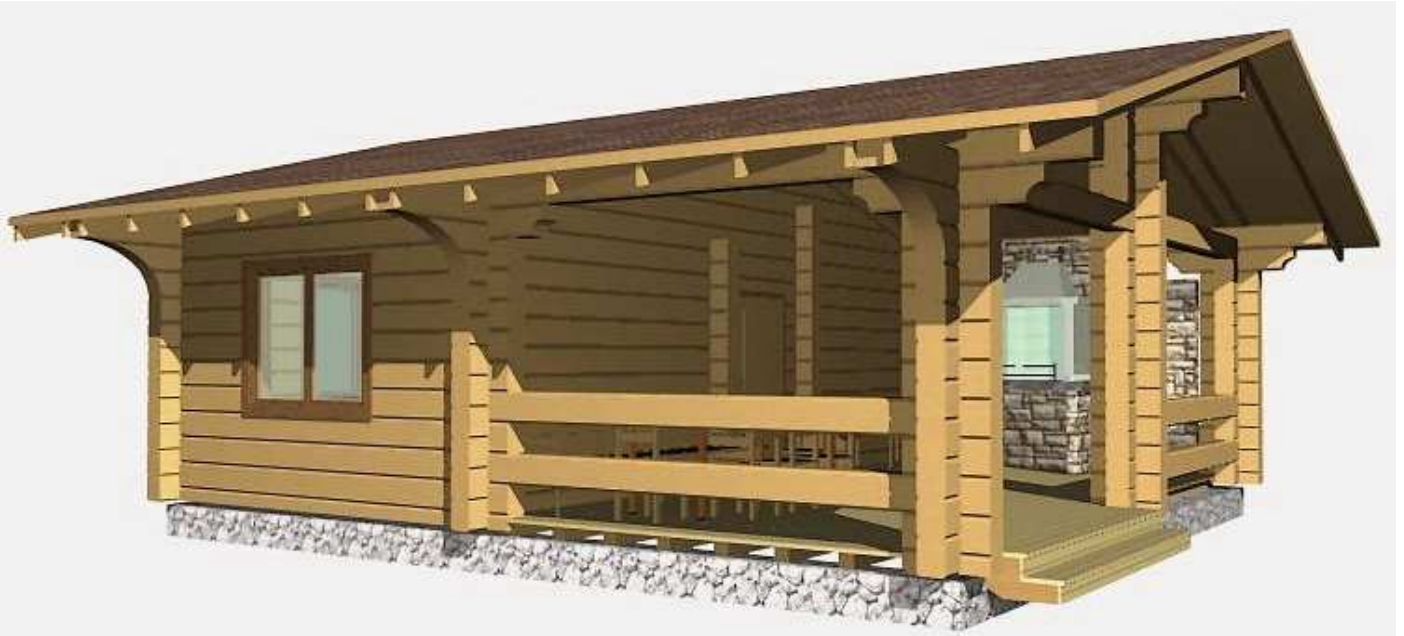


# ***SAUNA/KIT* > MINSK-1 – 54,00 m<sup>2</sup>**





***SURFACE HORS TOUT : 54 m<sup>2</sup>***  
***SAUNA/25 m<sup>2</sup> - TERRASSE/29 m<sup>2</sup>***

**PROMTECHRESOURCE**  
Production of living log-houses

**SAUNA MINSK-1** made from a dry laft on Scandinavian technology

A sauna has a terrace of 29 m<sup>2</sup> and 5 internal apartments: room of rest of 12,5 m<sup>2</sup>, steam room of 4,3 m<sup>2</sup>, shower-bath of 4,4 m<sup>2</sup>.

Interaxial sizes of 8000(length) x 7100(width).

A sauna is made from a dry laft. All walls of apartments planed hand planes and does not require finishing.



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**Nous vous proposons les matériaux suivants de haute qualité:**

Matériaux travaillés manuellement, rondins massifs en pin de 160, 200 et 220mm

Profilés 120mm (massif) du bois - le pin

Accompagnement articles:

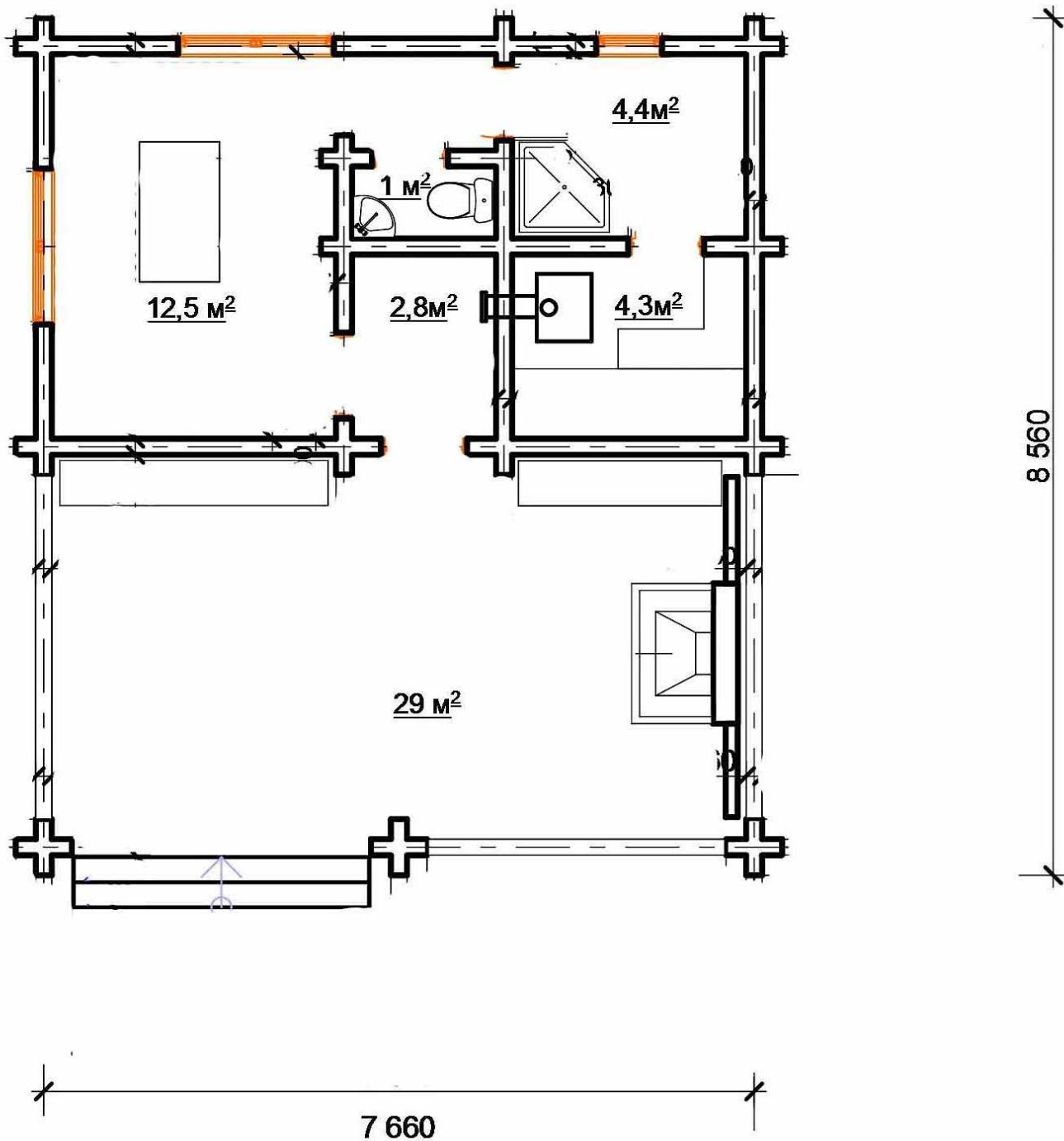
Poutres rondes diamètre 200 - 300 mm, matériau: l'épicéa.

Chevron 50x200 mm, matériau: le pin.

Autres chevrons 50x50 matériel: le pin.

Panneaux de toiture 18-20 mm, matériau: le pin.

(chevilles de bois) Matière: bouleau.



## Wooden houses

Special characteristics of wood allow a high level of comfort to be reached inside a house. Timber is the most sanitary material for construction. Its natural origin is of great importance as it provides clean environment and aeration, the wood "breathes". Walls made out of logs are warm when felt, they absorb noise and contribute to natural ventilation and air clearance.

The wood is not influenced by electric and magnetic fields. Wood is easy to process and to combine with other materials. And finally, wood is good for the thermo isolation. It allows to keep inside a wooden house the optimal temperature/humidity ratio. Wooden houses are energetically effective – they keep warmth in winter and coolness in summer. It is pleasant to breathe and it feels comfortable in any weather. While making wooden houses one can realize architecture peculiarities and artistic features dictated by Russian national house building traditions.

When choosing a wooden house the main thing is the desire to live in a place that will contribute to your psychological and physical health. Many people like the emotional connection with the land and the wellness that can be provided by a wooden house. We recommend you to choose a wooden house as a place for your happy family life.

## Materials for house manufacturing

Pine is the most perfect construction material.

It is known long ago that the best logs are made out of coniferous timber.

They possess a smooth dense texture, high aeration property. Pine has a special place among other soft wood timber.

This is a strong and unpretentious tree easily adapting to any climatic conditions.

For house manufacturing we use the pine growing in the North of Belarus.

It is here that the strongest and healthy pines grow with a smooth even trunk with the less amount of knots. Environmental conditions of this location are perfect for normal not too fast growth of trees and less humidity of wood.

The thinner are annual rings of the material used, the stronger, more durable and apt to deformation it is.

We offer the following materials of high quality:

Walling materials Hand-made bars 160 mm 200 mm 220mm . Timber - pine.

120mm profiled bar (massiv) timber – pine

## **Accompanying items:**

Round beams diameter 200 - 300 mm, material: spruce.

Rafters 50 x200, material: pine.

Addition for rafters 50 x50 material: pine.

Roofing boards 18-20 mm, material: pine.

Nagels (wooden pins) material: birch.

T-shaped boards for swimming frame work of door ways and window openings, material: pine.

Decorative posts, flooring boards, decorative plinths, ceiling panels are additionally available.

## **The technology of manufacturing a hand made house on the enterprise "Promtechresources"**

For walling production we use pine wood logs 32 cm in diameter and up to 12.5 m long. Pine is a wonderful thermo isolating material which meet the requirements for residing in all seasons. Logs are sawn to make a rectangular bar with the standard thickness 160mm or 200 mm. The height (width) of every bar is individual ranging 250-450 mm. The natural narrowing of a log (from the bottom to the top) is used in timber processing.

The production technology allows the difference of 1cm in height per every meter of length. We use two kinds of bars: with the oval facet and with the straight one taken at the angle of 45 degrees.

Sawn goods up are dried up to humidity 18-20% and treated by antiseptics. First of all, the timber is kept under shades with enough spacing provided between bars for natural aeration and drying.

Then, before entering a construction site, as required by production technology, a bar is placed into a drying chamber. Processed like this a bar gives less crackles and the wood saves its healthy properties almost fully.

For wall manufacturing the technology of angular joints of the type "Norwegian Cross" is used which is widely spread in Norway for several centuries. Norwegian Cross is known to provide a very good quality for angular connection between the walls. When crossed like this, bars form self-locking joints in a corner which provide proper rigidity of the whole construction. Besides, for strengthening of walls and stiffness of the construction birch pins(nagels) are used for fixing wall bars.

Every wall bar has a natural narrowing that is why in a hand made house every corner joining is performed individually by hands. For this special tools produced in Germany or Norway is used. This enables accuracy and precision of joints. We ensure a high quality of the houses produced (no cracks in angular joints sites). In the middle, along each log a longitudinal anti deformational cut is done which provides control of longitudinal cracks parallel to walls. This cut is the optimum for a log house.

Then this cut is covered by the groove of the overlying log. To adjust logs special carpenter's tool is used which drawing the line repeats the profile of an underlying log on the surface of the next one. Then by means of the electric saw, a special axe and tests the necessary groove gets out. As

a result an ideal connection of logs is reached which provides a proper density even if humidity of wood is lowered. A forced rigidity of a construction in an assembly contributes to the decrease of settling of the house.

Due to traditional Norwegian elements of rafters systems all design of a roof has a unique appearance outside and high original ceilings inside a house. Elements rafters systems are made of lengthy fir-tree logs (up to 14 meters) planned manually the diameter of which after processing makes 270-350 mm depending on a size of the construction.

The frame work of each building (including a design of a roof) is assembled in an industrial premise of the enterprise. After this all walling bars and roofing elements are enumerated.

Then a house is dissembled, walls are planned with a manual plane which provides a higher degree of smoothness and accuracy.

Then a construction is gathered into packs, fixed with a packing tape and sent to a buyer. As far as the house is manufactured out of well processed material (walls are finished manually) there is no need for additional finishing it is available for residing immediately after its erection. The natural structure of wood creates a special design of walls. The house can be immediately painted from outside so the dried up wood with humidity 18-20% is used for manufacturing a house. This will additionally protect the wood from the penetration of a moisture.

Massive log walls guarantee warmth and comfort, keeping the house warm in winter and cool in summer.

Many manufacturers produce hundreds of complete house sets every year on special lines - conveyors with mechanisms thoughtlessly performing the work. Having an opportunity to compare, people would always prefer a good hand-worked house to the house made serially. Century old pines growing in our woods make a wonderful construction material. A hand worked cabin manufactured with every bar adjusting the profile of the following one and keeping its own individuality not turning into just a "pencil" can stand for centuries. One can order houses which will meet requirements and opportunities of every client.

A Standard complete set of a hand made wooden house:

- walls made out of a pine bar (laft), thickness of a bar 160mm, 200mm, 220mm;
- rafters for a roof 200x50, 250x50, 200x100
- roofing round beams, diameter 30-40 cm.
- additional pine beams for roofing rafters 50mmx50mm;
- birch taps (pins,nagel) for a fastening wall beams.

In addition decorated columns for terraces can be made, roofing boards.

### **The technology of manufacturing house on a mechanized line**

Holiday and Summer houses (or for residence in temperate areas) are mechanically produced on lines out of soft woods (coniferous). The wall thickness is 120mm.

These houses are simple in construction.

Houses are manufactured from the preliminary dried material which allows high quality guaranteed.

When dried the walling bar is planed in order to provide the necessary size and shape.

In the process of house production the proper quality control is being constantly performed.

A Standard complete set of a wooden house:

- walls made out of a pine bar , thickness of a bar 120mm;
- rafters for a roof 200mm x50mm, 150mm x50mm
- roofing round beams, diameter 20-25 cm
- metal plates for rafters.
- metal bracket In addition decorated columns for terraces, roofing boards, desk for floor can be made.

### **Projecting**

The enterprise has long- term relations with some architectural companies having experienced specialists on their staff (architects, designers, constructors) that have long been specializing in projecting wooden houses.

These highly qualified architects and constructors use a great number of original techniques characteristic for modern house building. Developed projects consider all the necessary features and details which allow to construct a house with minimal expenditure of labour and time and also make the following exploitation of the house easier.

Our archives keep lots of ready made interesting projects.

If you want to purchase a house made from natural wood, then we are ready to produce it for you so that it would correspond to all your needs and wishes.





Montage du chalet à la fabrique en Biélorussie pour contrôle avant expédition



Emballage de chaque élément composant le kit, numérotés pour en faciliter le montage







\*Nous fournissons également des services en option pour le montage de nos chalets par nos équipes d'ouvriers biélorusses ou uniquement l'assistance d'un technicien.

Les prix et les conditions du travail seront précisés en supplément dans chaque contrat en fonction des prestations demandées par le client.



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