SANJAY WOODTECH PVT. LTD.

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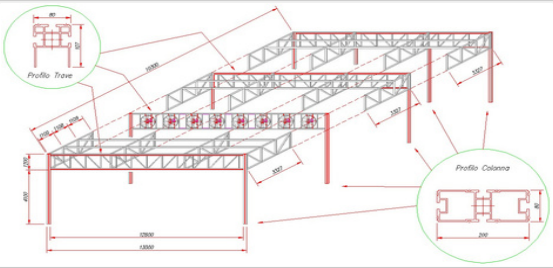
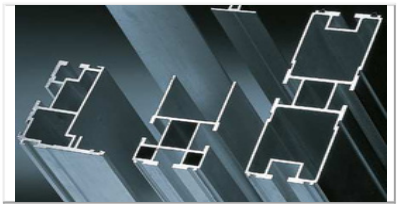
DESCRIPTION OF THE PLANT AND ITS COMPONENTS

a) Supporting Structure LEM

Perimeter bearing structure completely made of special extruded profiles, oversized and reinforced, obtained by our matrixes. Ceiling and frontal carrying structure completely made of special aluminium extruded profiles, realized by prefabricated and modular modulus. Elevated number of purling for the connection of the transversal beams, to reduce the light through the roof panels supports.

Front loading structure





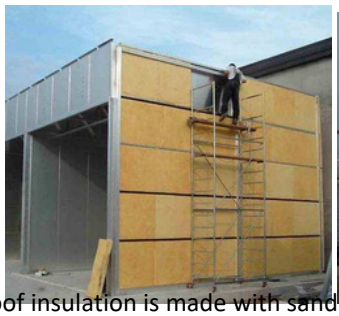
Data concerning our profiles:

Weight of the bearing column profile:	7,5	Kg/m
Weight of truss profile (horizontal beam):	4,3	Kg/m
Weight of the door frame profile:	5,1	Kg/m

Our profiles are studied to guarantee optimum mechanical resistance and optimum airtight of the cell. The aluminium alloy used, Al Mg 0,5 Si 0,4 Fe, according to UNI 6063 T6 UNI rules, is high esteemed and the most indicated to resist at acids actions, in particular to the tannin.

b) Insulation

Insulation coating realized by an “independent frames” system, connected, composed by special chassis sheet, smooth type internally, in aluminium alloy, shaped to grant more stiffness and to contain the mineral wool panel. The external coating is made by ribbed aluminium sheets for the drainage of possible internal condensation. The fixing system of the “frames” to the bearing structure is completely realized using stainless steel screws and bolts. All the joints are thermal insulated with special gaskets in order to avoid thermal bridges and to guarantee the best sealing even with high temperature conditions (over 100°). The internal coating is composed by an aluminium hull, treated to prevent corrosion and fixed to the structure using stainless steel bolts.
This internal hull contains the mineral wool mattress, 100mm thickness, having the most suitable density for this kind of use. The inside sheet is made of aluminium alloy meeting UNI EN 9005/1, DIN 3.0505, Al Mn 0,5 Mg 0,5. norm. The outer aluminium sheets are made of al 1010 alloy.



The roof insulation is made with sandwich panels (thickness 80 mm + 40), Internal aluminium sheet thickness: 0,8mm

c) Ventilation LEM

Axial fans with symmetric wing-section blades, completely made in aluminium, assembled on strong conveyors in stainless steel AISI 304. Our fans offer maximum power and optimal ventilation with the best results in both rotation directions. In the specific case, the reversible axial impeller, in aluminium, with 900 mm of diameter to combine to every motor, is supplied with inclined blades for the air-aulic optimize, installed on a special hub. To help the working conditions, we choose the use of a bigger size and declassed motor, maintaining though the same efficiency and absorption, but working with ¾ of the load, guaranteeing a longer life of the same motor.

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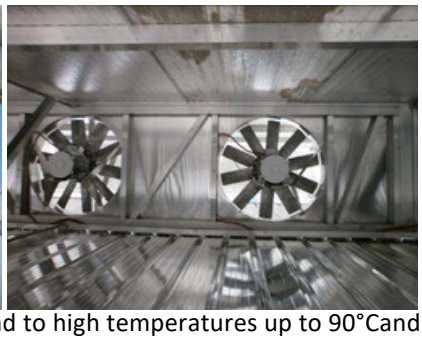

Electric motor in aluminium casting, realized for withstand to high temperatures up to 90°Cand environmental conditions with humidity up to 100%, having the following characteristics:

Winding up motor in H class;
Protection grade IP55;
Bearing HT (high temperatures), air tight, shielded and back/front equal. Special fat is HT with an oversized play on the spheres to obviate the expansion due to the high temperatures;
Tropicalized winding and treatment of all the internal parts of the motor with special varnish to resist the corrosive and humid working conditions;
Cash engine closed (without ventilation);
Exhaust condenses;
special insulating seal in viton, placed on the drive shaft to prevent the entry of moisture into the engine;
Continue Working temperature guaranteed 90°C (really there exists a security margin that permits to push the surrounding temperature over the indicated value).

d) Heating (COILS) STAINLESS STEEEL + ALUMINIUM

Heating batteries in bi-metal, complete of manifolds, able to resist in the years against the acids exhaled during the wood drying process. Each plant is provided with the installation of a heating battery made of more parts (exchangers) according to the requested capacity of the plant. The batteries are provided with inlet and outlet stainless steel manifolds and are fixed to the structure with special supports fit to balance materials thermal expansion while working.
It is also provided the supply of 1 motorised 3-way valve for each drying plant, necessary for the temperature control and of special automatic air-valves that prevent the forming of air bubbles inside the battery that could compromise the efficiency.


e) Air exhaust system (on the roof, individually motorized)

The vents are made of aluminium, opening through servomotors. These may be supplied with ON-OFF switch, they allow the regulation of the opening according to the climatic conditions inside the kiln, keeping a regular climate and getting a max energy saving. Suitable self- lubricating bushings in “arnite” ensure years of regular and maintenance free operation.

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f) Moistening system (Sprayingsystem)

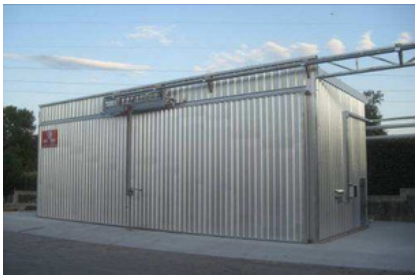
Low pressure water moistening system(3 Bar) This system produces small water droplets thanks to special nozzles to guarantee the hygrometric equilibriuminside the cell, reducing the conditioning time at the beginning of the cycles and avoid the color adulteration and the stress of the wood. Every kiln is provided with many nozzles fitting in the Inox pipe AISI 304 that could be dismantled (to permit the possible cleaning and maintenance), connected to an intercept electro valve that control the drops flow in the kiln.

g) Intermediate ceiling c/with air RUBBER baffles

Built with ripped aluminium plates, fixed to the ceiling with stainless steel screws and appropriate aluminium profiles to facilitate the inspection under the ceiling. Mobile curtains, allowing a perfect air circulation inside the chamber.

h) Sliding door (c/w hydraulic translation trolley)

Doors built with special extruded aluminium. The ribbings and the joints permit the holding of the neoprene-dutral gaskets, capable to resist to temperatures over 100° C, that censure a perfect hermetic sealing. The insulation is realised in panels as above described. The doors are to slide. An appropriate translator trolley, produced with strong steel profiles, provides to the hydraulic lifting and the shifting of the door along the rails. The system is realised with a servomechanism and a special device that provides the closing and the supporting of the door.



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i) Inspection door

Built completely in aluminium with insulated panels of the same type used for the insulating of the chamber and doors. It is provided with safety handle for the opening from the inside. The tight is guaranteed with neoprene-dutral gaskets, fit to withstand high temperatures.

j) Electrical panel

Electric board is assembled in conformity with international laws, in a sectional box, protection level IP 55. The electric system is built with the connection between the electric board and all the automatic system, and between the control equipment and the electric board (placed at max. 5 meters from the chamber). In case of exposure to high temperatures and/or if electromagnetic compatibility is required to prevent interferences caused by electronic equipment, only silicone cables, properly sized, can be used.

k) Automatic control system VENUS 2500-8F-PRO

Type of function: DRYING

Each microprocessor is equipped with cables and probes to detect
drying temperature (2 probes)
EMC (2 probes)
wood moisture (8 probes)

Number of phases for cycle: System with 8 phases
Type of phases:

1) Pre-heating
2) Initial conditioning
3) Drying
4) Equalizing
5) Final conditioning
6) Cooling

Type of relays: PROPORTIONAL

This fully automatic control system, controlled by a microprocessor, connectable through interface to a Pc, allows the direct control of the drying cycle parameters. It can run with 8 phases, among them different drying steps, with the possibility to set temperature, drying gradient and fan speed. The system includes already 24 pre-set drying cycles, that can be recalled by a wood code, which identifies the type of wood to be processed. Any pre–set cycle program can be modified and personalized according to customer's requirement and then recorded. Venus 2500 also provides energy saving pre-set programs to regulate fan speed, when the plant is equipped with inverters, and optimize cycles according to any process phase.

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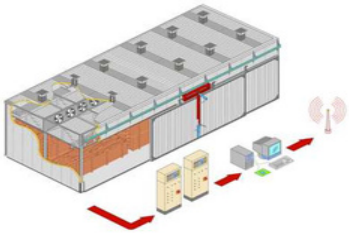
Venus 2500 can be connected, through phone cables, to one PC and, by installing one interface, it can transfer the drying control data to a PC, allowing any further data process under Windows®.

The anti-freeze system is another main function: it avoids the freezing of the water inside the heat exchanger when the kiln is not working and electric panel is on.

I) Interface + Software

Interface to permit the communication and transmission of the facts between the computer and the electric conductors of the drying cycles. Software System RX 6.2 for the contemporary control of the drying cycles up to 32 chambers. Software "SUPPORT BIGonDRY_13" for the remote control of the chamber and the transfer of the facts. The system controlled by a microprocessor, connectable through interface to a Pc, permits to record the facts and the control of the drying cycles of each chamber. The ability to the PC connection allows the remote-assistance of our plants. Note: the PC is not included!



II) OPTIONS

D. FREQUENCY MODULATOR, COMPLETE WITHKEYBOARD AND CABLES (NR. 1 INVERTER FOR EACH DRYING KILN)

The inverter is a frequency converter used for choking the rotation speed of the ventilators, fed with a three-phase voltage suitable to Japanese standards. Protection level IP 20. The inverter permits to reduce the kiln's management costs, optimizing the energy consumption and increasing the users comfort. The respect of the electromagnetic compatibility is based the principal basic for the planning of the inverter. Depending on the model of the inverter, the filters and the inductances may be integrated or available as option.

The inverter is supplied ready to use for the ventilation and the pumping applications.

The frequency modulator includes a graphic terminal, that could be able to modify the program functions, regulation, order or controlling functions to adjust and personalize the application according the customers demands.

The main functions of the frequency modulator:

Speed ventilators regulation
Energy saving
Noise motors reductions
Thermal motors protection

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E. MOISTENING SYSTEM (SPRAYING SYSTEM) HIGH PRESSURE

High pressure water moistening system (80 Bar) with high water flow range compared with traditional systems.
This system produces extremely small water droplets due to high pressure and special nozzles to guarantee the hygrometric equilibrium inside the cell, reducing the conditioning time at the beginning of the cycles and avoid the colour adulteration and the stress of the wood. An internal fan creates a pillow of air that sustains and facilitates the diffusion of the micro drops in the air. Every room is provided with many nozzles fitting in the Inox pipe AISI 304 that could be dismantled (to permit the possible cleaning and maintenance), connected to an intercept electro valve that control the drops flow in the room. The system is provided of a humidity meter and a control system to assure the best dropping working. This technology presents low management costs thanks to the high-water flow range with low power consumption.


Advantages (compared with Low Pressure Water system)

- Faster heating process
- Faster conditioning process
- Better equalization and stress reduction
- Increased wood quality
- Faster drying cycles

F. TECHNICAL CORRIDOR LEM 20.80.22 COMPLETELY BUILT IN ALUMINIUM

Bearing structure completely made of special extruded profiles. Insulation by sandwich panels, 40 mm PU Foam + 0,8 mm. aluminium sheet. The room is equipped with 1 door, 1 window.
Useful inside dimensions.

Width:	2,0 mt
Length:	8,0 mt
Height:	2,2 mt