



Wood Treatment Technology

High-pressure impregnation plants

– world-class impregnation!



Impregnation of wood is a matter of trust – and no impregnation plants can be better trusted than those of WTT. Furthermore, with the fully automatic computer control, impregnation has never been easier.

Features like the hydraulically operated and automatic rapid closing door and the fully automatic mixing and dosing unit, make daily operation even easier.

WTT offers a long range of impregnation plants in the span between 5 to 100 m³. The plants are available as the compact T10 plant, the integrated HD 606 and the large-scale T20.

Already in the standard version the WTT impregnation plants meet even the strictest requirements with e.g. the well-functioning and compact pump unit as well as the large storage capacity with 30% extra volume. The vast variety of options ensures the possibilities to tailor the plants exactly to your needs. Among the optional features one could point out fully automatic loading and operation, hydraulic tilt of the autoclave and extra door.

Turnkey impregnation plant

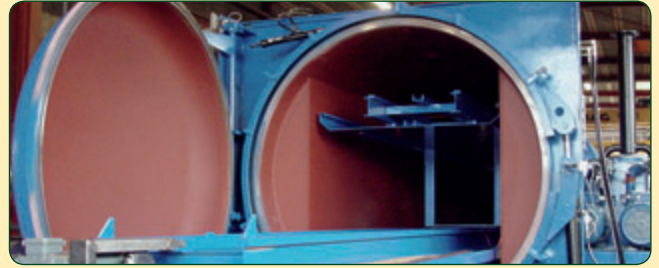
- Approved quality in accordance with EN13445 – The pressure Equipment Directive and the Machinery Directive. Delivered with CE construction certificate
- Up to 24 months' guarantee
- Storage tanks in 8 mm steel plates
- Storage tank with 30% higher storage capacity than the pressure vessel
- All aggregates installed on solid frame
- Water-cooled vacuum pump without aerosols
- Ready-made transport and operation system, complete with rails
- Steam fixation processes under vacuum
- Automatic dosing and mixing system

WTT also manufacture laboratory plants for research institutes and offers renovation of all makes of impregnation plants.



Low pressure impregnation plant

– for basic treatment



Different from the vacuum/high pressure impregnation the timber is preserved with organic wood preservatives (either water emulsion or organic solvent based) in a vacuum/low pressure process for hazard classes 1-2.

These wood preservatives give a certain protection against heart and dry rot without changing the dimensions of the timber. The effect of protection is though substantially lower than by using vacuum/pressure impregnation. Windows, doors, balconies, garden furniture and measure-observing building parts are therefore often preserved with double vacuum impregnation for basic protection with a pressure of up to 2 bars.

WTT double vacuum plants work with a vacuum of 95% and the plants operate with quick filling to achieve better control of the absorption of the wood preservative and to avoid surplus uptake during filling.

Selected features:

- Cylindrical storage tank placed above or next to the autoclave
- Water-cooled vacuum pumps
- Optimal reuse of the solvents (volatile organic type)
- Fast filling phase to avoid surplus uptake of impregnation preservative



Creosote impregnation plant

– superb treatment of timber with special requirements



For the ultimate protection against rot and insects and where special requirements are to be met – such as protection of railway sleepers and transmission poles – the CR606 creosote impregnation plant from WTT distinguish itself.

In this modern and environment-friendly plant, the autoclave – placed in the storage tank – is constantly heated by means of a heat exchanger. Through this special construction an extremely rapid filling with only very modest heat loss is made possible. This principle meets requirements of current creosote types that need to work permanently at temperatures about 130°C.

Operational safety and environment friendliness is ensured with the full automatic computer control, a closed cooling system and combustion of all process gases.

Selected features:

- Fully automatic, hydraulic quick-locking door with exhaust of the gasses
- Automatic door opening with automatic rail bridge
- Integrated impregnation autoclave in the pre-heater
- Oil-cooled pumps in closed system
- Combustion of all process gases
- Final cooling of the impregnation charge in an extra cooling autoclave

SSV vacuum drying plant

– swift and lenient drying



Manufactured in capacities ranging between 10 and 260 m³, with lenient and colour-sustainable drying times that are 3-8 times faster than conventional systems, the SSV vacuum dryer meets every imaginable demand.

Add to this the unique strain-free products, the uniform colour of e.g. oak, the crack and mould-free drying, and not least the natural colour maintenance of e.g. beech, maple ash and birch – and you are sure to have picked a winner!

All processes are controlled automatically via PLC and computer software, where the operator has a large variety of programming and report possibilities.

Drying times

The quick-drying, steaming and high-temperature drying under vacuum ensure superior drying times – a few examples:

- 120 mm spruce/construction timber from 80-15% in 4-6 days
- 65 mm oak from 30-10% in 12-15 days
- 65 mm beech from 70-10% in 8 days
- 50 mm oak from 30-10% in 8-10 days

Features

- Solid stainless steel + 150 mm insulation
- Insulated operation and engine room
- Speed-regulated, reversible ventilators
- Up to 100 m³ timber volume
- Turnkey delivery and operational within 24 hours
- Complete pump section with vacuum pump, cooling tank and measuring tank in the pump room
- 6-year guarantee on the stainless steel autoclave
- Optional steam or smoking function
- Automatic charging system
- PLC and computer control (Windows 2000/XP)
- Remote control via Internet from practically anywhere
- Alarm via SMS

...not to mention the many optional features that enable WTT to tailor your new SSV dryer exactly to your requirements. Feel free to contact us for further information.



Vacuum drying plant with smoking equipment

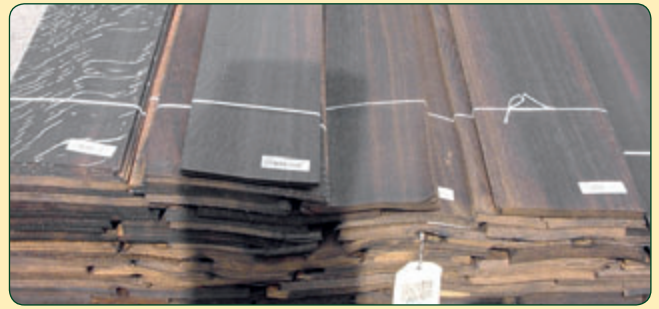
– wonderful, noble and dark wood colours



This very recent development is a truly innovative milestone in WTT's developmental history. A unique, through-colouring of veneers, boards and even strong and massive wood planks is now possible due to this completely new procedure for treatment of tannin-bearing timber.

The "smoking" of for instance oak and acacia with ammonia takes place as an additional step to the drying process in the WTT vacuum dryer. The obvious advantage of this concept is that the plant is capable of operating with this special treatment while being fully functional as a vacuum dryer as well.

Speed and quality are key words in the process: Oak planks of 65 mm are through-coloured perfectly within



approximately two weeks – about one third of the time needed in existing systems with only limited penetration.

Implementation of the newest technology ensures that all requirements regarding impact to the surrounding air and water are met immediately, as is the case with requirements to operational and industrial safety.

Wonderful wood colour tones are obtained in the treatment of mainly oak, but fine results are also obtained with other species like e.g. acacia, chestnut, pine, larch, and tinea.

Energy vacuum drying plant

– vacuum drying with energy recovery



With this revolutionary drying plant almost 100% energy recovery is attained, leading to a halving of drying costs of e.g. construction timber!

Recovery of the energy in the vapours that are produced in the process, makes additional heating superfluous. The process is water-free and there is consequently no need for water connection. Apart from the savings in energy consumption, this doubles the lifetime of the vacuum pump.

Selected features:

- Fully integrated and insulated pump and technique room
- Energy system with integrated additional heating system without the need for connection of water and heating
- Heat treatment for export timber with data documentation
- Automatic PLC control and optional graphics software under MS Windows
- System for automatic charging of the wood

Hot-Oil treatment plant

– for durable colours



The WTT-Osmose hot-oil treatment plant combines an oil treatment process and a drying process. The wood package is treated in an autoclave filled with hot linseed oil. Under vacuum and circulation the wood is dried and the linseed oil sucked into the wood. The uptake is controlled by adjustment of the vacuum. The purpose of the oil is to seal the wood surface and thus to increase dimensional stability. As water is prevented from penetration into the wood, the development of cracks is reduced significantly over time.

When the wood has been dried, the oil treatment takes place, and the wood is subsequently ready for use. The wood is available treated in clear oil without UV protection as well as in red, yellow or brown with UV protection. (Special colours are of course also available).

The application areas are numerous

All external above ground applications – timber houses – play ground equipment – terrace fences – cladding on buildings – laths – sound and view barriers – fencing – balconies – carports – door and window elements.

Wood protection combined with colouring will last for decades. This new linseed oil process was developed in close cooperation with the company OSMOSE® – one of the leading manufacturers in the wood preservation industry.

Turnkey hot-oil plant tested in our factory

- Production in accordance with European norms. Delivery with CE quality certificate
- Up to 24 months' guarantee
- Fully automatic, hydraulic quick-locking door
- Optimal penetration of the linseed oil through hot vacuum impregnation
- Reuse of the impregnation water
- Rotating device ensuring optimal colouring
- Four-colour system with heated storage tank and cleaning function
- Automatic material transport system
- Fully automatic control under M5 Windows

...and bear in mind: Painting intervals on shady side is approximately 15-20 years, and on sun-exposed sides approximately 8-12 years!



Heat treatment plant

– dark and exotic colour tones



If you are looking for domestic wood with

- Better dimensional stability
- Better resistance against micro-organisms and fungus attack
- Exotic colours
- Long durability

...you should seriously consider a WTT heat treatment plant!

In this 100% chemical-free process recently developed by WTT, the wood is submitted to heat treatment at high temperatures for a preset duration. The heat treatment is accomplished in an autoclave, where a combination of heat and steam pressure results in an efficient, safe and careful treatment, that – in opposition to other processes – does not completely dry out the wood.

The wood is treated in a steam pressure process at 3-19 bars and at working temperatures at 140-210°C. This lenient, and yet fast process is applicable for treatment of pre-dried wood (8-12% moisture content) at absolutely attractive process costs.

The plants are naturally fully automatically controlled via PC under MS Windows. Plant sizes vary between 6 and 30 m³, which results in annual capacities between 1,000-10,000 m³. With optional possibilities such as steam function and linseed oil treatment, WTT will tailor the heat treatment plant in accordance with your wishes.

The result is coniferous as well as deciduous wood with unmatched, beautiful exotic colours: The dark colouring of heat-treated wood makes it popular for manufacture of parquets and flooring in general as well as the application areas mentioned below:

- Humid areas, wellness, sauna, swimming pools
- Windows, marchioness and shutters
- Outer doors
- House fronts
- Garden furniture, pergolas
- Play ground appliances
- Terrace flooring



WTT – plants for the wood-working industry

The company was founded in the name of DWT in 1981, but changed it later and continued operation in the name of IWOTECH (IWT). In 2003 four senior colleagues took over the company and to mark this, the name was changed to WTT (Wood Treatment Technology.) Between them these four colleagues have almost 100 years of experience within wood drying and wood impregnation and represent together an extensive field of competence.

Throughout the years, WTT has proven to be a competent and reliable partner as a leading company within development, manufacture and sales of plants for industrial wood preservation and drying.

Continuous development is ensured in cooperation with leading institutes as for example BFA in Hamburg – Germany, the Holzfachschule Biel in Switzerland and Forintec in Canada. This is why laboratory plants also form part of WTT's product portfolio, and recent clients within this field are Laval University – Canada, Latvian State Institute of Wood Chemistry and Danish Technological Institute.

Service and software...

WTT is currently servicing more than 1000 plants delivered to different companies within the wood protection industry, wood trade and wood processing in more than 36 countries. This is possible due to the fact that once the plants have been erected and installed with the client, WTT can monitor and update the control systems on-line from almost anywhere. This principle provides for the client maximum security for a smooth daily operation. Apart from being tailored to the exact needs of the client, the software is furthermore very user-friendly, and allows the client to have a very fine overview of the various processes.

When a client chooses a WTT plant, it is installed and taken into operation by the company's own technicians. This ensures the client the best possible after sales service. Round-the-clock service characterizes WTT – a natural consequence of the clients' dependence of stable, daily operation. WTT service covers Europe and other parts of the world whether the client is in need of a single spare part or if he requires a total service solution, WTT will take care to deal with the matter immediately.

If you want to know more, why not visit us at:

www.wtt.dk



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