

# ALIEN PROPERTY CUSTODIAN

## PROCESS FOR PRODUCTION OF PLASTIC PLYWOOD

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The invention relates to the production of plastic plywood.

It is known that plywoods are generally formed of thin sheets or laminae, often from different species of timber trees, which are so glued one upon another, that their grains are crossed and by using caseine or albumin containing or other glues, said glues causing subsequently many inconveniences such as ungluing, formation of blisters and so on. Further, the compound material so obtained has only a uniform rigidity.

The object of the present invention is to provide a method of producing plywoods, or simply veneer woods, by using a new process, utilising new technics and making possible new technical applications.

The method of producing plastic plywood consist of:

(1°) Using as wood to be glued, thin sheets or laminae previously impregnated with synthetic resins, said impregnating resins having been hardened or polymerised within the wood fibres.

(2°) Preparing specially said laminae by fixing into each of them, but by pairs, different hardness or suppleness indexes.

(3°) Obtaining plywood structures or assemblies, by gluing together:

(a) Unimpregnated woods with impregnated woods having similar hardness indexes;

(b) Woods, which have all been impregnated and with similar hardness indexes;

(c) Unimpregnated woods with impregnated woods having different hardness indexes;

(d) Woods, which have all been impregnated, with different hardness indexes.

(4°) Using as glue for binding the laminae or wood pieces together, synthetic resins improved by supplying substances or synthetic or ordinary resins, specially prepared for this purpose.

(5°) Interposing between the laminae, a quantity of so prepared synthetic resin, in the width whereof a resistance wire, metal sheet or copper-nickel wire trellis is imbedded, or, alternatively, covering the obtained piece or the external surfaces of the formed material with wires, metal sheets or trellis or the like, leather, fabrics etc. while using said resin as adhesive film.

(6°) Covering all external surfaces with a more or less thick film of said resins, and polymerising said film in any known manner.

The present invention makes thus possible to obtain veneer woods or plywoods having new qualities giving the possibility of new technic applications, amongst which it may be mentioned:

First example: By gluing together previously impregnated laminae, with the same product as has been employed in their impregnation, there is obtained not a simple increasing of the contact points, but the formation of an absolutely homogeneous body, through solidification of all the resin which is contained within said body or brought for the gluing, and that, without any surface tension; the material so obtained forms positively an assembly or structure whose laminae are inseparable.

Second example: Semi-hard laminae, then very pliable laminae, further very hard laminae, and so on are glued by pairs on a central impregnated and rigid lamina or sheet: a body or structure is obtained having a very great resistance to shock, rupture and crushing, the very pliable laminae causing among other things the vibratory waves and the penetration of foreign bodies to be stopped in spite of their initial projection velocity.

Third example: Impregnated laminae with very high hardness index are glued on a central unimpregnated lamina or sheet. The material so obtained will have such differences of density in its composition, that it will be possible, especially for the construction of aircraft propellers, to annihilate the vibrations of the centre and even to completely suppress these axial vibrations. Further, in this case the gluing of the laminae is no more a phenomenon of molecular attraction through intimate contact, since the impregnation product which has run through the treated laminae is the same as the adhesive product emanating from the same chemical substance specially prepared for this purpose.

Fourth example: Hollow bodies, such as ship hulls, are formed with previously impregnated laminae, which are still supple after their impregnation; on these bodies are glued in opposite directions and with the same resinic impregnating product laminae having higher hardness indexes; thereafter the whole is completely polymerised in an usual manner.

Fifth example: In the fabrication of the hollow bodies and before the last lamina is positioned, a metal sheet of constant an imbedded in synthetic resin is incorporated, and said hollow bodies are covered with a wide mesh wire trellis, imbedded in said resin; there is so obtained, for instance in the case of floats or buoys, hollow bodies having resistance qualities in all respects and not to be compared with such as obtained heretofore.

Sixth example: When the compound material obtained by gluing the laminae together is com-

pleted or after the construction of the hollow bodies directly in the desired form, the whole is covered with a more or less thick layer of synthetic resin of the same composition as the resin used in the impregnation and the gluing, and the whole is heated in a known manner in order to effectuate the final polymerisation of said resin, with or without vacuum, pressure or heat; the body so obtained is absolutely tight, rigid and homogeneous.

It is to be noted that the utilization of specially prepared synthetic resins and the employment of laminae or sheets previously impregnated with said substances will make it possible to obtain bodies having insulating qualities, which can be increased or varied as desired by incorporation of chemical or dielectrical substances in said resins, and modifying or suppressing any molecular, radioactive or inductive attraction, vibratory waves, resistance to electric, magnetic or electromagnetic radiations, resonances, aerial electric discharges, etc, while increasing materially the

qualities of resistance to shock, shearing, crushing, distortion, ungluing, disjoining and to the attack of atmospheric agents, acids, salt vapours or the like.

- 5 It is to be understood, that every above given indication is only exemplary and may be varied, in a large extent, without departing from the scope of the invention and without modifying its characteristic features; for instance during the  
10 preparation of synthetic resins intended to make them suitable for the production of the above indicated veneer woods or plywoods, products with an accessory function and apt to impart any special quality whatever to the finished product may be added.

- 15 The new material produced by employment of improved resins makes it possible, due to the composition of its constituents and the chemical and physical phenomena caused or promoted by them,  
20 to obtain a new technical product giving the possibility of new technical applications.

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