

TECHNICAL DATASHEET

1. Oberflex type wood veneer laminates (Prestige d'Oberflex, Chic & Pop, Les Sablés by Oberflex in matte finish, Spiced Wood, Textured wood, Natural Shades collections)

The fabrication with panels of the "Oberflex" product range should be carried out in compliance with the "Guide de mise en oeuvre des stratifiés décoratifs haute pression" (Fabrication guide for High Pressure Decorative Laminates) as defined in Specification standard NF T 54-320. In addition, we would like to add the following comments :

Storage and handling. Store the panels face to face. Flat storage is the best. It is possible also to store them vertically in racks specially designed to avoid sagging. It is recommended to store the panels in an atmospherically stabilized room to avoid extreme fluctuations of moisture . When handling, care should be taken to avoid scratches and cracking of the resin . The best way to carry panels is with two persons so that the decorative face is on the concave side.

Conditioning. Bodies of whatever type are never inert . They are sensitive to ambient conditions (temperature and humidity). Due to their real wood surface, the panels are slightly more sensitive to warping than conventional laminates. Prior to gluing, they have to be perfectly conditioned. If they are glued when moist, there is a risk of cracking due to shrinking of the wood, particularly in winter when humidity often falls below 20%.The best method of conditioning is to store substrates and panels for a period of 8 to 10 days in the same room where the atmospheric conditions are the closest possible to those of the site where they are to be used . This is especially important in the case of overheated rooms without humidity control.

Ideal conditions are :

- Temperature : from 18° C to 22° C
- Relative humidity : 40 to 60%

There is a risk of cracking due to shrinkage of the wood if the panel is used too moist, while too dry a panel may expand with, as a result, warping or blisters on the surface, if gluing was not perfect. Conditioning is effective only if air circulation is possible between the sheets during storage. When substrates are to be faced on both sides it is advisable to stack panels and substrates in the same sequence as their eventual construction in order to achieve hygrometric balance. A dry atmosphere is preferable to high humidity.

Substrates. The panels can be applied to all kinds of base material having a perfectly flat and thoroughly clean surface, such as particle board, MDF, etc, with the exception of solid wood. Gluing to metal requires careful preparation of the surface, particular attention being paid to thorough degreasing with a strong solvent (trichlorethylene, etc...). Bonding on cement or gips substrate is to be avoided.

Balancing. To avoid warping of a panel lined with an Oberflex type laminate, the stress on both sides must be balanced . The best result is obtained by using an Oberflex type laminate on both sides. Another, more economical method, though without any guarantee on our part, is to obtain a balance by using an ordinary laminate of the same thickness (note that Oberflex type panel thickness

may vary depending on the wood species).

Example : a 1mm thick Oberflex panel should be balanced with another 1mm thick laminate. Narrow panels for wall covering, held rigidly in place by a securing system or reinforcement, can have just an Oberflex face side, if the back side is protected from humidity and covered with an ordinary veneer, paint, lacquer or a vapour-resistant varnish.

Gluing. The surface to be glued must be sound, thoroughly dry, clean and free of dust, wood chips and oil.

Press Gluing. Gluing with the use of a press is the safest method. Conventional adhesives normally applied to laminates are recommended: vinyl glue (Alfo D3N41), formol urea glue (Tempolite RL1101), etc... When gluing with a hot press, do not exceed 60°C. Above that temperature, there would be risks of creating tension harmful to effective adhesion.

Gluing without a press. A number of neoprene glues available on the market may be used. Glue at an ambient temperature of between 18°C and 22°C with a 40 to 60% relative humidity rating. Dry heat is an advantage, cold delays evaporation of the solvents, while overly high humidity can cause harmful condensation.

Description of the different neoprene adhesives to use :

- a. High performance polychloroprene adhesive, which is a currently available contact adhesive normally suitable for all gluing work requiring strong adhesion. We recommend the use of PATTEX Super puissante», «SADERPRENE Special» and «Super AGOPLAC».
- b. High temperature resisting polychloroprene adhesive, should be used in all cases where an excellent mechanical resistance to high temperature (up to 120°C) is called for . We recommend the use of «PATTEX SPECIAL», «AGOPLAC DI GEL» and «SADERPRENE GEL».

Application of the adhesive. Prior to application, the adhesive must be thoroughly homogenized . Apply a regular, symmetrical coat of glue to the two sides to be bonded, use an appropriate tool (serrated trowel, gluing roller, short-bristle brush, spraying gun) . Ensure the coat is sufficiently thick on the edges . If the glue is applied with the aid of a serrated trowel, the direction of application on substrate and decorative laminate should be at right angles to each other.

After evaporation of the solvent, the glue film must be clearly visible and sufficiently thick. In the case of porous or extremely absorbant surfaces, several coats of adhesive must be applied. Before gluing the two units, both glue films must be touch-dry (the adhesive must not stick when touched) . Observe the curing times specified by the glue manufacturer.

Comment: An overly brief evaporation time creates a risk of incomplete evaporation of the solvent (weakening of the gluing) . An overly long time leads to poor adhesion of the two glue films. Note: it is not recommended to apply the glue direct with the laminates vertically installed. Application should be with the laminates in horizontal position.

Gluing of CSTB-tested «M1» fire rated panels : The adhesives referred hereabove are for use with our standard grade panels. In the case of fire-retardant grade panels, which have a different underlay and are applied to different types of substrates themselves fireproof, we recommend contacting the glue manufacturer to ascertain the product best suited in each case. Certain glues recommended for use with our standard grade panels are in fact unsuitable for fire-retardant

grade sheets.

Hand pressing. Only a roller can achieve results comparable to a press . We recommend the Pattex roller most suitable for this task . Rolling should be in both directions starting from the centre and working towards the outside, paying particular attention to the edges.

Important : Strong pressure on the roller is recommended.

Fabrication. Sawing - milling - drilling: can be done with all tools currently used for the fabrication of laminates.

Protection of cut edges. Following levelling, the cut edge of the wood must be isolated from the air in the direction of the wood grain by application of a clear varnish to ensure even better aging of the wood and prevent oxidation.

Cleaning off glue residue. Vinyl glue stains (white glue) are water-soluble and may be easily removed. Stains from neoprene or formol urea glues (with separate hardener) must be removed immediately . If the glue deposits have had time to harden on the panel surface, they will be difficult to remove without damaging the panel's surface finish, their removal being possible only with a sharp-edge chisel.

2. Brut d'ober laminates

The panels are fabricated and glued in the same manner and on the same substrates as conventional laminates, see paragraph 1. In addition, we would like to add the following comments :

Handling. Handle carefully, the wood veneer may split, if handled incorrectly.

Substrates. When using 0.8 mm thick panels, it is imperative to bond a perfectly flat substrate.

Hot press bonding. Do not exceed 70°C.

Balancing. We strongly advise against using conventional type laminates for this purpose, the two materials being subject to differing expansion coefficients . For instance, doors may be backed both sides with Brut d'Ober sheets of same thickness and same surface finish. This is the same case when using thin substrates and/or in big dimensions.

Wall panelling, on the contrary, allows backing with Brut d'Ober one side only, provided the sheets is rigidly held in place by a securing system or reinforcement, while the back side is protected from humidity and covered with a vapour-resistant coat of paint, lacquer or varnish. Cleaning off glue deposits : proceed as for a solid wood surface.

Surface finish. Panels supplied pre-sanded, needing slight additional sanding by the fabricator for a professional result.

3. Bioply and 3Dply laminates

The panels are fabricated and glued in the same manner and on the same substrates as conventional laminates, see paragraph 1. In addition, we would like to add the following comments :

Storage. Bioply and 3Dply panels are composed

of real wood veneer and therefore sensitive to temperature and hygrometry variations. Panels should be stored flat in a closed environment with a hygrometry level between 40 to 60%.

Balancing. To avoid panels with bioply (or 3DPLY) to wrap, tension on both faces should be balanced. A bioply (or 3DPLY) panel of same thickness should be used on both faces, using the same adhesive. Balancing with other counterface can be done, after tests, and without any guarantee from Oberflex.

Gluing. Choice of adhesive is to be made according to substrate and final usage of the product. The surface to be glued must be sound, thoroughly dry, clean and free of dust, wood chips and oil.

Press Gluing. Gluing with the use of a press is the safest method. Conventional adhesives normally applied to laminates are recommended (vinyl glue, formol urea glue, etc...). When gluing with a hot press, do not exceed 60°C. Above that temperature, there would be risks of creating tension harmful to effective adhesion.

Note: For 3Dply panels, use a press bearing that will adapt to the texture without distorting it.

Gluing without a press. A number of neoprene glues that are available on the market may be used. Glue at ambient temperature between 18°C and 22°C with a 40 to 60% relative humidity rating. For the application of the glue, be sure to follow the manufacturer's adhesive recommendations, especially the application and tack time and flash time instructions.

Note: Not enough evaporation time (flash time) may lead to incomplete evaporation of solvents (weaker glue bond). Too long evaporation time may lead to a bad adhesion of the 2 sealant films.

Winding. The winding must be done in the two directions, from the center outward. It is important to pay attention to the edges of the panel.

Machining, Sawing, Drilling. Machining, drilling and sawing operations are easier than on any laminate panel. That is why the machines commonly used for laminate machining are ideal. Note: For aesthetic reasons, do not perforate 3Dply panels.

Finish. Panels are delivered sanded (150 grit). However, before applying the finish, it is recommended to realize a slight sanding. For 3Dply panels, use a non woven abrasive sheet like Scotch-brite of 150 and then 240 grit. Special attention is to be paid not to even out the texture. Bioply and 3Dply are made of non defibrated layers of veneers. However it is advised, before applying the first coat of varnish, to apply a pore filler. The use of a polyurethane varnish is recommended.

4. The "Sablés unfinished" laminates

The panels are fabricated and glued in the same manner and on the same substrates as conventional laminates, see paragraph 1. In addition, we would like to add the following comments:

Handling. Handle carefully, the wood veneer may split, if handled incorrectly.

Hot press bonding. Do not exceed 70°C.

Balancing. We strongly advise against using conventional type laminates for this purpose, the two materials being subject to different expansion

coefficients. For instance, doors may be backed both sides with "Sablés unfinished" sheets of same thickness and same surface finish. This is the same case when using thin substrates and/or in big dimensions.

Cleaning off glue deposits: proceed as for a solid wood surface.

Finish. Remove surface contamination from the panel surface by sanding in the direction of the wood-grain using a non-woven abrasive sheet like a Scotch-brite with a P240 granulation (grease contamination can be removed by applying solvents such as methylated spirits or acetone). Nota: The sanding could be done thanks to industrial sanding machines with adapted cylinders. Oberflex recommends testing your technique on smaller pieces of material prior to work on your project. After a dry removal of dust of the whole panel, please check the quality of the sanding. Due to the surface texture of the product, we recommend application of a filler and observing a minimum drying time of 12 hours, then carefully sand the panel surface in the direction of the woodgrain using a non-woven abrasive sheet like a Scotch-brite with a P320 granulation. If a tint should be applied on the panels, please apply preferably a solvent or hydro-alcoholized tint.

For the last one, spray-tint will give better results. If you require a tint, cleaning should always be practiced in the direction of the wood-grain. Finally please apply the varnish in one or two layers depending on the desired look.

5. Oberswing natur laminates

The panels are fabricated and glued in the same manner and on the same substrates as conventional laminates, see paragraph 1. In addition, we would like to add the following comments:

Storage and handling. Due to the flexibility of the product, flat storage is the best. Nevertheless, it is also possible to roll the panel for the storage to avoid damages. When handling, care should be taken.

Substrates: Due to the low thickness of this product, it is imperative to sand Oberswing Natur on a perfectly flat surface.

Balancing. Doors may be backed both sides with Oberswing Natur sheets of same wood specie and with the same surface finish. This is the same case when using thin substrates and/or in big dimensions.

Fixed panelling, on the contrary, may allow backing with Oberswing Natur one side only, provided the sheet is rigidly held in place by a securing system or reinforcement, while the back is protected from humidity and covered with a vapour-resistant coat of paint, lacquer or varnish without any commitment from our side.

Gluing. The choice of the glue depends on the substrate and fixing method. In order to apply the glue, follow the manufacturer's instructions and observe the curing times.

Spread the glue the most regularly as possible. In the case of porous surfaces, several coats of adhesive must be applied.

Gluing without a press: The entire neoprene glues (or contact glues) available on the market may be used. As Oberswing Natur is a flexible laminate, the following fabrication recommendations have to be followed to avoid any risk of separation and blister.

Prior to gluing, all the products, that is to say

glue, substrate and Oberswing Natur laminate have to be stabilized according to the atmospheric conditions where these are going to be installed.

Ideal conditions are:

Temperature: from 18° C to 22° C.

Relative humidity: 40 to 50 %.

The surface to be glued must be clean, thoroughly dry, sound and not in contact with humidity.

- Glue has to be applied regularly without any surcharge.

- Observe the curing time for each glue and also adapt it to the temperature and humidity of the location during the gluing.

- Before gluing the two surfaces, we recommend to lay down an insert (grease proof paper, carton...) on the substrate. Then remove it progressively with great cautions in order to have the two surfaces in contact.

- Hand pressing by using a roller starting from the centre and working towards the outside.

Important: Strong pressure on the roller is recommended.

Press gluing. do not exceed 70° C.

Finish. Before working on the finishing product, sand slightly all the surface. Make sure previously that the materials are compatible. Before finishing the Oberswing Natur, we recommend to wait 24 hours after the gluing process. Observe previously that there is no bubble nor blister on the surface.

Varnish. Due to the defibrated structure of the veneer, we recommend to apply a filler before varnishing. Dry it up form 12 hours to 24 hours. Sand carefully and apply the varnish.

Matt varnish. Apply two or three matt varnish coats, which will be a filler.

It is essential to make a trial before applying the finish to make sure that there is no reaction between the veneer and the finishing products.

Fabrication. Sawing-milling-drilling can be done with all tools currently for the fabrication of laminates and even with a cutter and scissors.

6. Smart Surface laminates

Smart Surface panels are fabricated and glued in the same manner and on the same substrates as conventional laminates, see paragraph 1. In addition, we would like to add the following comments:

Storage and handling. Smart Surface panels must be store flat and transported on adapted pallets. Never roll the panels to avoid bending that could impede proper installation.

Balancing. For the balancing, use a 9/10e mm thick metal laminate (type Pure Paper Metal, Skin - Natural Brushed 4041, supplied by Ober).

Machining. Due to the use of a metallic layer in Smart Surface panels, special care is required to avoid sparks during machining: Use preferably carbide circular saw blades with a "dry cut" gear type, which has a maximum of gear teeth in regards to the diameter and adapt the speed of cut for a quality work.

Following machining, flush the cutting edge with a soft file to eliminate any metallic residues.

Maintenance.

Smart Surface panels with satin finish for writing with dry-erase marker

Use a smooth and clean microfiber cloth or a dry-erase eraser.

Marker residues can be eliminated with soapy water.

For an optimum maintenance, use quality dry-erase markers and insure that they can be erased by proceeding to a test prior to use. If required, proceed from time to time to a cleaning with ethyl alcohol. Dry erase markers storage conditions can influence the maintenance of the panels, store them flat and respect manufacturer's recommendations.

Smart Surface panels with matte finish for writing with chalk

Use a smooth and clean microfiber cloth or a wet sponge.

Special care is required for Smart Surface panels with matte finish as an intensive rubbing can generate a slight polishing of the surface. Make sure the product is adapted to its intended use.

Magnets. To display items or hang accessories on the Smart Surface panels, we recommend to use Neodyme magnets.

7. Architectural bonded panels (Panober - Obersound: 5.5 designers, micro perforated and classic collections)

The panels should be fabricated in compliance with Specification NF XP B 54-202 : « Panneaux décoratifs plaqués-bois - Spécifications » (Decorative, wood-veneered panels - Specification) or equivalent.

On-site fabrication conditions:

Fabrication should normally take place in the following conditions:

- Prior to installation, the panels must be stabilized to ambient conditions. To this effect, store them for at least 3 days in a flat position in the place where they are eventually to be installed.
- When installing the panels, allow for a 1 mm/m expansion joint.
- Increase that joint to 1.5 mm/m in the following cases :
 - for rooms likely to be subjected to major atmospheric humidity variations
 - in cases where flame-retardant (M1-rated) panels are used.

On-site conditions

The rooms where the panels are to be installed should normally conform to the following conditions :

- they should be roofed
- they must have been heated or air-conditioned for at least 24 hours
- all cement and plasterworks should be dry
- ambient temperature must not fall to below 15° C
- ambient air humidity during the stabilization process and at the time of installation should respond to the following criteria :

If the panels are installed in a dry area: The relative air humidity during the stabilization phase should be within the range of 40 to 60%. Once the panels are installed, the ambient air humidity may exceed 65% only for a couple of weeks per annum.

If the panels are installed in a humid area (bonded to a hydrophobic substrate) :

The relative air humidity during the stabilization phase may exceed the range of 40 to 60%.

Once the panels are installed, the ambient air humidity may exceed 85% only for a couple of weeks per annum.

8. Ober Compact

The installation of the Ober Compact panels will be carried out in accordance with the specifications of the manufacturer complying with the NF XP 54-233 standard for «Thick laminated panels and compact panels» or equivalent.

9. Wood ceiling tiles (Ekosound)

On-site fabrication conditions. We recommend that tiles are stocked in an area of low humidity. Before installation, the Microsound tiles need a min. 48 hour acclimatisation period in opened packs, on the site where they will be installed.

On-site conditions. The cement and plasterworks must be dry. Rooms must be water-free. They must have been heated or air-conditioned for at least 24 hours. The temperature must not be below 15°C. The ambient air humidity rate during the acclimatisation period must range between 40 % and 60 %. If the room is likely to be exposed to significant humidity variations, please consult us.

ON-SITE CONDITIONS

During stocking and installation of the Oberflex panels, important temperature or hygrometry variations may occur (>30%). Those variations may cause bowing or cracklings on the products. This could not be considered as a flaw in the products in case of claim.

TECHNICAL ASSISTANCE

Our technical department is at your disposal to help and advise in each particular case. The information offered in such cases, as well as that contained herein, is given to the user in good faith and to the best of our knowledge. However, the only criteria we take into account and guarantee is the intrinsic quality of our products.

GUARANTEE

Ober guarantees the intrinsic quality of its panels as having the technical features described in this document. Due to the use of genuine wood veneer, slight surface irregularities or colour shade nuances are considered to be normal and do not represent a defect. Due to their nature, the panels react like all woods, so discolouring is a result of excessive exposure to sunlight or moonlight should in no way be considered as a material defect. In the event of a dispute, the guarantee and liability of Ober will be limited to free supply of non-fabricated panels to replace the defective ones.