



LUXFLOOR QUALITY

The control of the raw materials

As in more the share of the technical products, the choice of the raw materials is essential. It determines for much the quality of the final product. Kronospan, manufacturer of laminated grounds, chose quality.

The principal components of Flooring (laminated flooring) are the melamine films and the HDF (fiberboard).

HDF (High Density Fiberboard)

- The HDF is a fiberboard of wood of very high density. It represents the heart of the laminated flooring. It contains nearly **wood 80%**.
- KRONOSPAN has a know-how in the field of the particle boards containing wood since nearly 100 years. **A controlled technology** is pledge of quality.
- The HDF produced by KRONOSPAN is controlled by the laboratory, on the level of the press as on the level of the finished product (sandpapered), and this for each production. These controls are done of course in agreement with all the standards in force. Regularly, of parallel controls are realized by laboratories independent of great fame
- The **mechanical properties** (Internal Bond, Pull Test...) are tested (according to INTO 324, 310, 319) just as the **characteristics of the product**: average density, minimum, final moisture and profile of density (according to EN 322, EN 317, EN 324).
- **Stability with moisture** is also controlled (i.e. swelling 24h according to IN 322).
- The **formaldehyde emissions** are supervised permanently guaranteeing a E1 classification for our products (according to EN 120).
- The **quality of the surface** like that of sandpapering is checked regular
- The color of fiber and the smoothness of the grinding are maintained most constant possible
- **Ecology and respect of the environment** have always priority at KRONOSPAN. The OCV (Organic Compound Volatile) inevitably emitted at the time of the manufacture of the panel "are eliminated" thanks to the use of modern systems of filtration. Consumption of energy and water is always minimized.
- Most of our products are certified **FSC** (Forest Stewardship Council) i.e. they result from the wood transformation resulting from a durable management from our local forests
- A partnership with many approved organizations enables us to offer products of certified quality (**LNE** - National Laboratory of test - France, **CTBA** - Technical Center of wood and furnishing - France, **WKI** - Wilhelm Klauditz Institute - Germany).

Paper and Melamine Film

- Rough paper being used for the production of melamine films is mainly manufactured by group KRONOSPAN. We are consequently the guarantors of our quality and, by doing this; we are the direct actors of the **optimization** and the **control** of this raw material.
- Are decor papers printed by **the largest printers** (Schatt, Süddekor, Mepa...) who implement know-how at the service of quality. The smoothness of the impression, the choice of inks and the control of the technology of impression make it possible, in fine, to propose decorations with made realistic and cordial. KRONOSPAN is owner of the rollers allowing the impression of these decorations, we are thus a Master of their level of wear.
- The constancy of the colors and the colors is controlled thanks to **reference samples** carefully preserved safe from the light.
- Is the impregnation of rough papers carried out either by professionals belonging to great groups of the chemical industry (Akzo Nobel, DKB...) maybe by KRONOSPAN. In both

cases, our position of **user-manufacturing** enables us to develop partnerships guaranteeing a perpetual improvement of the product.

- The rough resins of impregnation, containing **melamine** (MF), are controlled rigorously. With the delivery and at the time of their synthesis: purity, contained in foreign body, dry extract, viscosity, pH, time of disorder, time of freezing, solubility and index of refraction. But also at the time of the process of impregnation: inspection test, time of disorder, gel time and viscosity.
- The impregnated film is controlled in a **continuous** way: moisture, permeability, capacity with the flow, contained out of resin. Pressings are carried out on presses of laboratory to control the transparency and the abrasion resistance of film.
- In all the cases, the impregnation is an **advanced technology**, which utilizes a **great knowledge** and **trade secrets** acquired years after years.

Controls in production

As we have just seen it in the preceding part, the materials constituting the laminated flooring result from controlled processes. Their conformity with the requirements is maximum and the level standard fixed is very high.

At the time of the lamination

The lamination is the process making it possible to apply melamine films to panels HDF. It is carried out under high pressure and at strong temperatures by fast presses with short cycles

- The quality of the lamination is initially possible by a **control of the process** and the **experiment of the personnel**. The conditions of pressing are clearly **definite, known** and **applied**, leaving little place to the improvisation or the blur.
- A continuous monitoring of the product is carried out by the personnel of control. Those control the **aspect of the panels** initially. The **adhesion of films** with the HDF is checked. They also control the **level of cooking** of melamine films by test with the concentrated acid and the **porosity** of surface. This one must be completely closed.
- Various structures are used and the brightness of the panels is controlled.
- The shape of the panels is guaranteed by frequent controls but also by a system of powerful cooling and optimum conditions for storage. The time of storage is sufficient to guarantee the dimensional stability of the panels but remains however enough runs to avoid any deterioration of the product.

During machining

Machining is the stage consisting in carrying out the shaping of the parquet blocks, defining the grooves and the strips of the attachment units. This machining is carried out at high speed with a **single precision in the sector of wood**.

- The design of the profiles was carried out in engineering and design department and the use of these systems has been tested for several years by many users. **Their simplicity, their reliability** and **their robustness** are not any more to prove.
- The **exceptional quality** of machining proposed by KRONOSPAN is possible thanks to the use of basic materials of high quality (HDF, melamine films) but also thanks to the conditions of production, as well at the time of pressing as at the time of shaping. The tools, designed, provided and maintained by the largest manufacturers, combined with the know-how of tested rulers allow the realization of a **work of precision**. The criteria concerning the quality of assembly thus respect with a great constancy the values required by the standard EN 13329.

- The reliability of the production equipment makes it possible to guarantee a **constant quality**.
- **Routine inspections** of machining (according to EN 13329) are carried out every hour by the production.
- A **control of greater scale** is even carried out, with the framing of the team leader every 4 hours.
- A follow-up of the production of every moment by the operators makes it possible to test the quality of the product **uninterrupted**.
- An extreme vigilance and a great experiment of the personnel of control guarantee the elimination of possible visual defects. A using electronic system of control of the cameras high resolutions still reinforces this detection.
- All is thus implemented so that the quality of the product always makes it possible to satisfy the final customer. At KRONOSPAN, **quality is the business of all** and this applies to the exit of the factory.

A constant monitoring of the laboratory

Independently of the production, the laboratory acts like an organization of control.

It carries out thorough and more complete tests and makes it possible to supervise the quality of the product to the daily newspaper.

Independent, its opinion is of primary importance. The laboratory is **the most difficult customer**.

Complete and thorough tests

- The laboratory carries out many controls on the product, with many stages of its manufacture (HDF, paper, films, panels rolled and finished flooring). These controls take place as well on the intermediate products on the finished products.
- The laboratory carries out the tests according to the European standard EN 13329 but as of the tests in production according to internal criteria, more rigorous as those defined in the standards.
- It controls the **mechanical** and **physical properties** flooring (wrenching of surface, impact resistance, swelling, abrasion resistance TABER, scratch resistance, brightness...) certain **chemical properties** (formaldehyde emission), the **quality of assembly** (according to EN 13329) and attaches a great importance to many **aesthetic characteristics**, which do not belong to any definite standard if not the requirements of the most difficult customers.

An orientation customer: the control of stock

- As already mentioned, the practical laboratory of completely **random controls** of the product. They place the personnel of the laboratory in the skin of the final customer.
- This control directed customer makes it possible to be detached from the technological considerations of the product to pay attention to the **real and direct needs** for the user (aesthetic, packing, fast assembly...).
- Productions by chance selected in stock, before final forwarding with the customers, then are thus tested.

Technologies with the service of quality

The laminated flooring is a **technical product**, resulting from the result of several **complex and delicate technologies**.

There remains held with those, which are able to control these new technologies.
The laminated flooring is a modern product, which uses modern and pointed processes.

A permanent work on the processes

- KRONOSPAN always followed the evolution of the products and technologies and always knew to remain with the **point of their development**. By its **philosophy** and thanks to its power, the group often played the role of pioneer in the emergence of new products thus forging a know-how by the experiment.
- This control of know-how gives sufficient flexibility to be interested in optimization and the **continuous improvement**.
- This permanent research applies to the manufacturing processes, guaranteeing an increasingly precise and representative control, an **increased stability** and a **larger reliability**.
- We do not modify the products to make them more compatible with our production equipment, we adapt our processes to make them more effective in the realization of the product than request the customer.

A daily research on the products

- KRONOSPAN work with the development of **new products** as to the **improvement** of those which exist.
- KRONOSPAN is with the **listening of the market**. We conceive and offer the products that the customer asks
- New profiles, new systems, new brightnesses, new structures and new decorations under development and are unceasingly proposed on the market.
- We also often analyze the products of our competitors to call us into question and to remain competitive and powerful.

Quality it is also the customer service

As we have just seen it, at KRONOSPAN, quality is guaranteed to all stages of the manufacturing process and relates on all the components and all the products but also to the manufacturing processes.

A very great traceability

- All the stages of the production, the facts and the conditions of production are recorded
- More the share of this information are stored and centralized in a data-processing database. Thus, each production can, a posteriori, being studied and analyzed to detect possible anomalies.
- Each incident of production is referred and all the **responsibilities** are clearly identified
- The materials used are the subject also of a precise follow-up guaranteeing a **great traceability**.
- The traceability is a major element for all the customers because it makes it possible to detect the problems quickly, to find the cause and to propose adapted solutions of it.

A service after fast and understanding sale

- A product of quality deserves a service of quality. This is why KRONOSPAN proposes a **technical aid available** and **qualified**.



- Clear procedures describe the steps to be followed in the event of litigation and KRONOSPAN is committed treating the requests **as soon as possible**.
- Where necessary, our **teams of technical-commercial** as our technicians even can, upon request, to go on the spot of a litigation to find **the solution** of it.