

Why water before oiling?

1 GENERAL

The cabinet-maker has known this for ages. Before staining furniture, the raw wood surface is treated with water. This causes the wood fibres at the ends to stand out, which means they can be cut off with fine sand-paper. During the staining process, the result is that raised wood fibres do not accumulate more stain and the coloured surfaces are more homogenous.

Raised fibres are not all that occurs when freshly sanded wood is watered. Through a microscope it is possible to perceive the wood fibres positioned at the top as a sponge pressed together. Through the effect of water the fibres swell up, meaning they increase their volume. When drying back the inter-connection of the fibres means that fibres which shrink in volume no longer lie closely side by side as originally, but cavities remain between the fibres, filled with air.

2 EFFECT ON OIL IMPREGNATION

Impregnations, like **euku oil 1FS**, **euku oil 2Plus FS** or **euku color oil**, can penetrate the wood better, in that they moisten the wood fibres and displace the air between the fibres. As finely dispersed air has the optical effect of white pigment (compare fine foam), this “white pigment” is displaced by the impregnation, so the wood grain becomes enhanced. Through opening the wood by watering this becomes even deeper and stronger, just as the impregnation – the oil – is drawn in deeper. The governing principle is that the lasting consistency of the oiled surface increases when it absorbs more oil. The more oil the wood absorbs during impregnation, the less water it will later absorb during its use. It is known in many cases of impregnated surfaces that every drop of water looks like a white stain. This arises from the fact that water “telegraphs” through the uppermost impregnated wood layer that “white pigment” air-between-the-fibres is produced. So you have to do during use what in principle you could have done before impregnation. Only, this way it leads to the customer’s dissatisfaction. This kind of white stain is difficult, if not impossible to control through cleaning and care. Why not do it right to begin with and water before oiling?

3 EFFECT ON PIGMENTS – COLOR OILS

The creation of cavities between the fibres has further effects. Fine particles of pigments can penetrate much better when using colour oils, like **euku color oil**, and distinctly stronger coloration is easier to carry out. Or rather, in order to achieve a desired depth of colour not so much pigment is needed; namely the wood is protected by the oil. Due to the stronger pigment absorption of the wood surface, a scratch mark, a sanding groove, or a surface pattern no longer show through so extremely. Of course, the sanding groove is still there, but at first glance does not lead directly to a complaint. Differences in the surface pattern caused by sanding at the edge and by a belt sander no longer lead to a variation in impregnation. Therefore the coloured surface becomes sustainably more even.

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4 EFFECT ON SUBSEQUENT WATERBASED LACQUERS

When using the oil/waterbased combination, if the impregnating oil is not really well hardened, it can lead to an opening of the wood under the lacquer, described above as the telegraphing effect of the water through the waterbased lacquer. The grain enhancement achieved with the oil disappears again, despite the effort invested, and the resulting floor will even look lighter than without oil. Unfortunately only patchy or cloudy, the effect is unpredictable. To solve this problem the floor will have to be basically sanded down. So before carrying out an oil/waterbased combination always water the floor!

5 EFFECT ON JOINTS

When using impregnating oil, not only the surface of the wood is impregnated. The joints between can also take up substantial amounts of oil if it is not properly pressed in with the spatula and polishing. The less solvent the oil contains, the more dependent it is on oxygen in the air in order to harden. Naturally the oxygen available to oil in the joints is greatly reduced. Especially out of the capillary gaps "squeezed joints" can occur long after oiling, if the wood moisture increases due to rising air humidity. Repeatedly liquid material comes onto the surface and is walked into the floor by the residents.

Rising wood moisture is unavoidable with the oil/water-based combination. Then "oil beads" along the joints have to be removed with interim sanding. This is a completely normal process and nothing to complain about, but understandably it leads to dissatisfaction.

Solution: a further effect of water is that it not only swells up individual fibres, but also the entire wood element. So by watering before oiling, the joints can be minimally pressed together, less oil is sunk into the joints, especially into the particularly critical capillary gaps. Therefore one should not wait too long after watering before oiling. The right time to oil is when the wood looks dry again.

6 How is watering carried out?

It is quite easy to wipe the freshly sanded surface with a moist cloth. For impregnation, it does not depend on how much, how even, or how often (overlapping areas) water is applied. The important thing is that the whole surface gets water. What should never be allowed to occur is for the water wiper to run dry and no water comes onto the wood. This can very quickly be seen and fixing this later is much more work than doing it right to begin with.

The amount of water is best decided according to the object itself. Brittle embedded adhesive, badly stuck slats, wood types with high moisture change rate are more critical areas of application, in which case one should still water the floor, but take it easy on the quantity. Oak embedded in a modern reactive adhesive is uncritical and generally tolerates greater quantities of water.

As far as the technique of applying water goes, the person carrying it out can use other possibilities, e.g. polish applicator, roller, bucket-pump, etc.

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7 Is it advisable to put water on freshly sanded raw wood?

For many years we have been using waterbased lacquers for lacquering wood. And of course with the lacquer water is also applied to the wood. So water is no problem for the sanded wooden flooring and advisable. One application with a roller at the primer stage generally applies 120-150 g/m², of which approximately 2/3 is water, i.e. 80-100 g/m². By watering the wood before oiling, much less is usually applied. Using a cloth, the amount of water is normally 50-60 g/m².

8 The wood becomes really raw from the water!

If it does not get raw when watered before oiling, then it will when watered after being oiled. However, the latter case means the customer wets the floor by cleaning it and sees this as a sign of poor durability and is dissatisfied. Oils are mostly polished out with a singledisc machine, in the process many of the outstanding fibres are also smoothed down, which significantly reduces the rawness. The customer does not see the smooth floor as it would have been without watering, so the result is normal for him, because it is attractive and even.

9 Help – I've forgotten to water one place!

If the person oiling, or colour-oiling the floor notices immediately, then it is generally not critical. Simply rub some water into the place with an abrasive pad, let it dry and oil over it. In some cases it may be necessary to polish out the whole room again. If the oil has already dried when the missed place is noticed, do the same, but it requires more sensitivity and skill by the person to repair it. In any case the overlooked place will be less conspicuous than before.

10 Help – I didn't sand down the old sealer properly!

The old layer of sealer must be completely removed with a hand-sander or scraper-blade, then water and let the wood dry, oil again and if necessary polish out the whole room.

11 Help – I have strange lighter "scratch traces" in the coloration!

The above mentioned "swollen sponge" can of course also be squashed together again. This happens easily, e.g. with hard knee-protectors, dragging the oil-bucket, etc. As described above, immediately rub the floor down with water again, using an abrasive green pad before the oil dries, then oil again and polish it out.

12 GENERAL

The explanations above concerning watering wood before oiling are, of course general and are not only valid for floors. This is also a very good technique for oiling or colouring furniture and table-tops.

Cleaning and caring for oiled, solid wood table-tops can be effectively carried out using water and an abrasive sponge, finally oiling again. Traces of impressions can often be drawn back out using a steam-iron. Similarly an old floor impregnated with oil can be restored to its former glory, whereby we recommend using a singledisc machine with an abrasive pad.

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Watering, next to pH effects, is one of the main effects of wood lyes. Therefore tap water can also be described as a “neutral lye”.

Pre-watering can also be used to improve the lacquer’s adhesion to wood of water-free products. There are limits to this, namely among products containing a large matt-finish component, both lacquers and oils, whereby the matting agent can accumulate as a white substance on the surface. Solution: work during priming stage with matting agent free materials, i.e. glossy grades.

Watering is good to recommend also in applications where after a solvent based primer the surface is finished with a waterbased lacquer.

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