



PROJECT TWO-LAYER ENGINEERED WOOD FLOORING



Pic. 1 Two-layer engineered wood flooring before the sanding (Nursery).

More and more craftsmen are installing high quality two-layer engineered wood flooring, because there is an increase in demand by the customers. However, its thin wear layer can cause problems when sanding.

This Direkt shows on the basis of a real life construction site, how you are able to achieve a very good result with low aggression, by using the TRIO in accordance to the matching working concept PST® and a professional operation when sanding floors like these.

REQUIREMENTS FOR A GOOD RESULT

The demands of the customers are constantly increasing and of course the overall look plays an important role in the choice for a wooden floor. But also sustainability, low resource consumption and long life span are important selling points as well. A hardwood floor should be as ecologically acceptably as possible today.

Life span and wear layer thickness

Of course a solid wooden floor has an overall advantage when it comes to life span than a two-layer engineered wood flooring. We describe in the following article how, under certain conditions by using the TRIO and PST® (Premium-Sanding-Technology), we are also able to sand a two-layer engineered wood floor and it still can be re-sanded.

The two-layer engineered oak floor of our project comes from certified local forests and is oxidatively drying white pre-oiled.

Pre-oiled two-layer engineered wood flooring is slightly more expensive, but brings advantages in handling and sanding.



Pic. 2 The costumers demands more and more sustainable products (source: Wikimedia, author: Jwh, CC).

Sequence of operation according to the PST®:

Machine	To consider:	Grit
HUMMEL®		60
TRIO	Criss-cross sanding	60
Filling joints		
TRIO	With Velcro rings	60
TRIO	With Velcro rings	80
TRIO	With Velcro rings	100
TRIO	With Velcro rings	120
TRIO	Sanding screen	100
TRIO	Sanding screen	120

■ Our project started with 100 grit

Pic. 3 PST®-sanding schedule.

The entry into the process according to the PST® is, depending on the starting position, at each in Pic. 3 shown grits possible. With the entry at the finest grit possible, little wear layer is removed and permits a re-sand in the future. The re-sand cycle is about 20 years.

By using a color oil an extra TRIO-cut was added to the standard procedure with a 100 grit sanding screen (Pic. 3). This shows the PST® is variable and the procedure can be adapted to the respective application.

Check the starting position and sanding according to the PST®

To get a high-quality result with the least possible removal / abrasion, the wooden floor must be flat and installed with minimal height differences (over wood and under wood). A good flatness of the sub-floor is a must here.

In the case of our project, thanks to high quality materials and professional installation (flat subfloor / overhangs max. 0,3 mm / 0.012 in), we were able to start with the TRIO at a 100 grit, according to the PST® (Pic. 3, yellow).

SANDING SCHEDULE AND SEQUENCE OF OPERATION

The sanding schedule and the work sequence (Pic. 4) developed for the project shows the basic parameters of the construction site and the products used for the install of the two-layer engineered wood floor and the work times. We started with the preparation of the subfloor.

Sanding schedule laying and sanding of two-layer engineered wood flooring

Newly laid (new construction site)	
Surface dimensions	110 qm / 1184 sq ft
Subfloor	Anhydrite subfloor
Species / sorting	Oak / natural (oxidative pre-oiled, white)
Parquet type	Strip flooring 500 mm x 70 mm x 10 mm / 19.69 in x 2.76 in x 0.39 in
Wear layer	3,5 mm / 0.14 in
Primer	Polyurethane primer
Adhesive	Silane modified polymer adhesive
Filler	No filling necessary, since no gaps were detected
Oil	White pigmented color oil for the initial treatment
Speciality	Underfloor heating, floor-to-ceiling windows

Sequence of operation*

Work step	Grit	Velcro ring	Screen	Extra weight	Attachment*	Time / min
SINGLE	24	Subfloor treatment (light sanding of the subfloor)				
Vacuum						
Primer						
Install						
TRIO (criss-cross)	100	x		x		180
Vacuum						20
TRIO	120	x		x		130
Vacuum						20
TRIO	100		x	x		140
Vacuum						20
TRIO	120		x	x		110
Vacuum						20
Oil application	Using a trowel					
SINGLE	Pad beige (buffing the oil)					
SINGLE	Super-pad white (polishing)					
Total Time	Sanding time (+ vacuum)					560 (+ 80)

* the edge sanding is not being considered in this chart.

Pic. 4 Sanding schedule and sequence of operation.

SUBFLOOR PREPARATION



Pic. 5 SINGLE light sanding of the subfloor.



Pic. 6 Primer for better adhesion.

Preparing the subfloor

To measure the moisture content in the subfloor, subfloor samples were taken at several points and examined by calcium carbide meter on its moisture content. Before starting installation work, the flatness was tested according to DIN. Please check the required guidelines f.ex. NWFA.

The subfloor was then thoroughly sanded with the SINGLE and a silicon carbide Velcro sanding ring with 24 grit.

The primer

To improve the wetting ability and as a bonding agent between the subfloor and flooring adhesive, it is useful to apply a primer. The drying time is dependent on the material and climate.

The PU primer used, was very low in emission (GIS-CODE: RU 1, EMICODE: EC 1 PLUS R) and fast-drying.

THE INSTALLATION



Pic. 7 Bonding of the two-layer engineered oak floor.

The bonding was performed with a very low-emission, solid-elastic, silane-modified polymer adhesive (GISCODE: RS 10, EMICODE: EC 1 PLUS R) from the same manufacturer as the primer.

The two-layer engineered wood flooring install was easy, due to the small tolerances of the individual parquet elements. Tongue and groove did fit very well, so tapping block and crowbar were not often needed.

SANDING THE SURFACE



Pic. 8 Surface after the first cut with the TRIO at 100 grit.



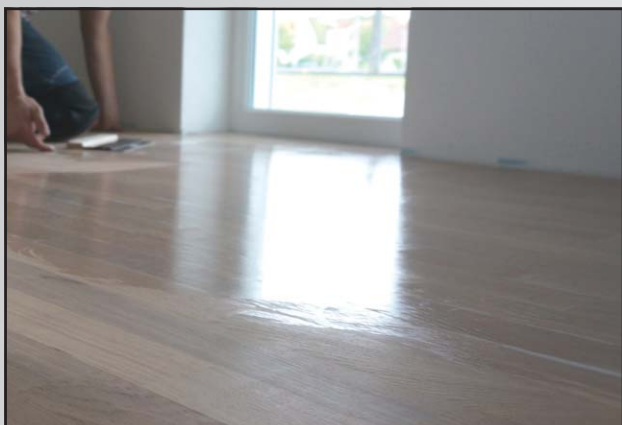
Pic. 9 Fine surface after the last sanding cut with the TRIO at 120 grit screen.

A high-quality two-layer engineered wood flooring and a professional install led to low (small) height differences of the single strips at a maximum of 0,3 mm / 0.012 in. Due to that it was possible to start with the TRIO at a 100 grit according to the PST® (Pic. 3).

By the simple application manner of the TRIO according to the PST® and it's lower aggression in comparison to belt sanders, at a high quality surface, time and wear layer were saved.

After the last sanding cut with the TRIO at a 120 grit screen the surface was perfect. So the finish with an white colored oil was applied.

FINISH



Pic. 10 Applying the color oil using a trowel.



Pic. 11 After applying the color oil using a buffer and a beige pad.

For the initial treatment, the wooden surfaces pretreated with oxidative hardening oil, a white pigmented oil was used on top. The application was done using a trowel. The color oil was easy to apply and to buff in fast using the SINGLE and a beige pad.

After a waiting period of approx. 30 min the surface was polished using a white super-pad.

FINAL RESULT AND MATERIAL CONSUMPTION



Pic. 12 Nursery after the installation.



Pic. 13 Wooden surface after applying the color oil.

The white pigmented oil increases the contrast of the grain and creates depth. This led, in this case, to a lively and warm tone and a high-quality wooden surface.

Conclusion:

Because of the use of the TRIO only little of the thin wear layer (3,5 mm / 0.14 in) was sanded down and the surface turned out really great. Using the TRIO and the PST® this two-layer engineered wood floor can be re-sanded at least **two** more times.

The house owners were extremely pleased by the result.

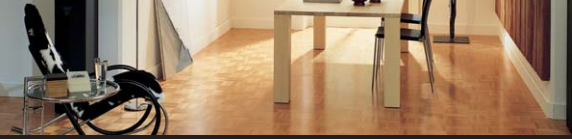
Material consumption:

Material	G 16	G 24	G 30	G 36	G 40	G 50	G 60	G 80	G 100	G 120
Velcro disc Ø 203 mm (TRIO)									18	24
Sanding screen Ø 203 mm (TRIO)									15	15
Standard pad white Ø 203 mm (TRIO)						9				
Standard pad beige Ø 406 mm (SINGLE)						8				
Polishing pad white Ø 406 mm (SINGLE)						4				
Plastic pins (TRIO)						3				
Dust bag (TRIO)						3				
Oil consumption (color oil)						3,5 l				

Pic. 14 Composition of the material used.

The materials required for the project are listed in Pic. 14. For the 110 qm / 1184 sq ft surface and this special application, the material consumption was within the expected ratio.

Information and registration for the PST®-workshop



Hi Carina and Desiree



Pic. 15 Carina Marques



Pic. 16 Desiree Schlitzke

Welcome to the LÄGLER®-Team: Carina Marques and Desiree Schlitzke

In the beginning of 2014 Carina Marques and Desiree Schlitzke started working in sales services and as PST®-Trainer as well. They are able to do PST®-trainings in German, English, Spanish and Portuguese.

Both have settled in very well with us. We wish them a long and successful future in our company!

LÄGLER® SUMMER-PARTY



Pic. 17 Our „champions“: LÄGLER® employees and „alumnus“ at this years´ summer party.

Every year ...

For the LÄGLER® employees, the summer party is a nice opportunity, off the everyday business to talk about all kind of things and spend a nice evening together.

On the 10th of July it was time again. After a nice dinner with specialities from the grill, the main topic of all conversation was of course the soccer world championship.

It was discussed and many of our “experts”, who predicted a few weeks before, we will be kicked out in the qualifying, were now sure, that the German soccer national team will become world champions three days later ...

LÄGLER® congratulates to Jogi Löw (Germany’s national team coach) and his team to a successful soccer world championship in 2014